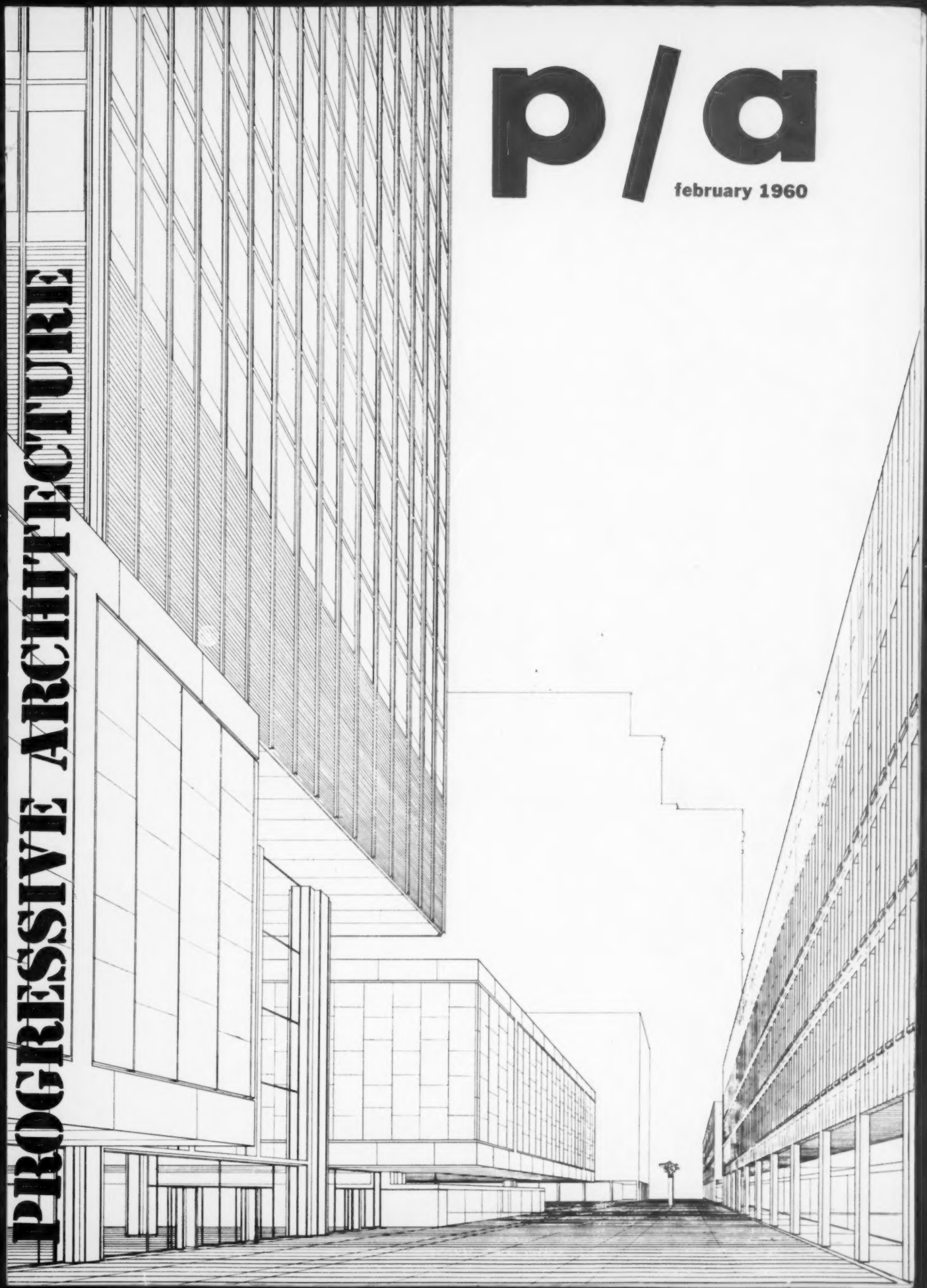
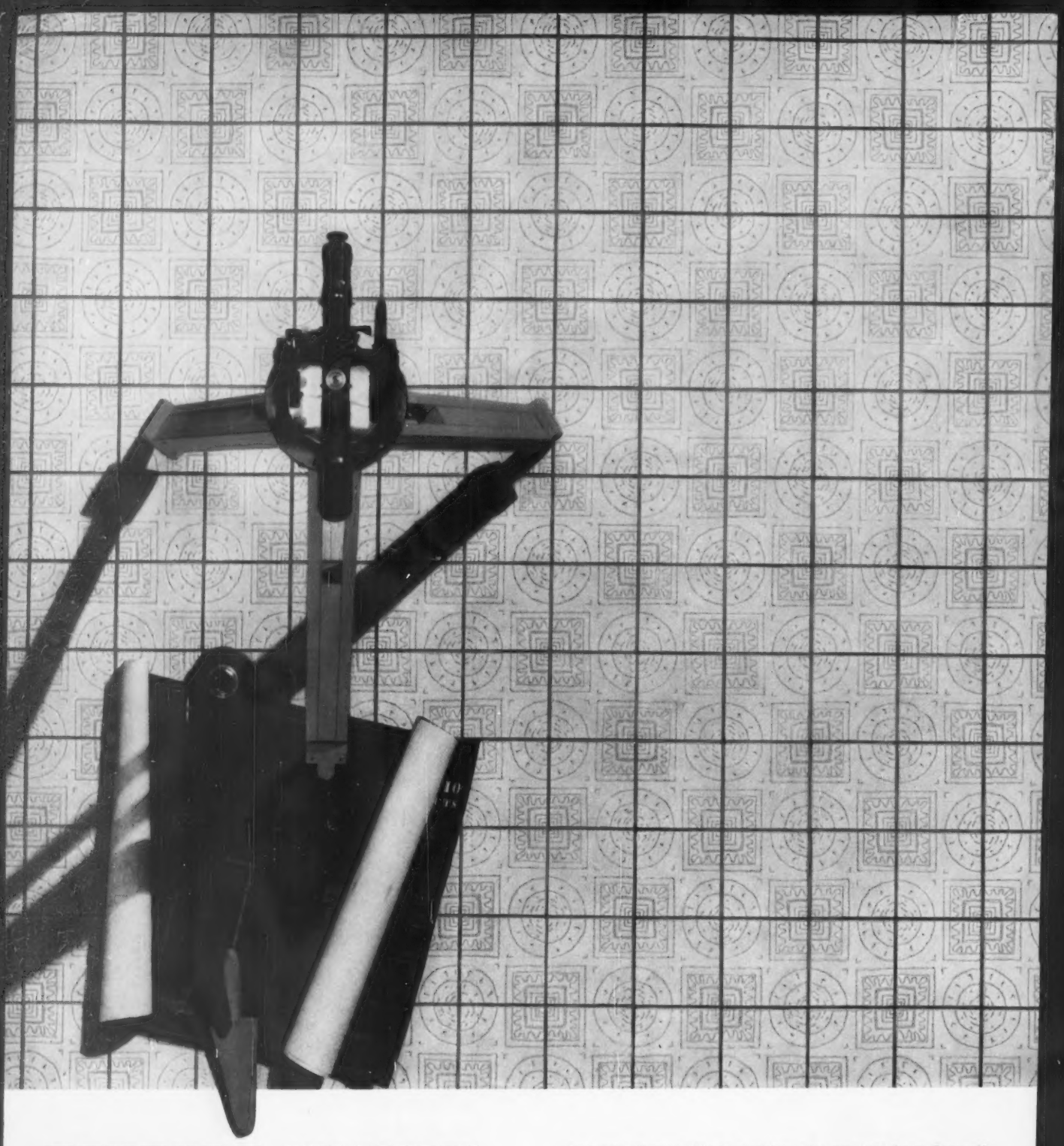
p/a

february 1960

PROGRESSIVE ARCHITECTURE





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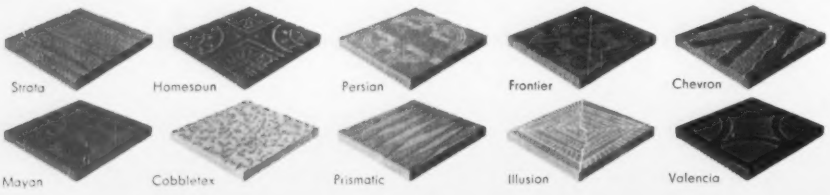

GLAZED QUARRY TILE
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SUMMITVILLE OHIO
Summitville Tiles, Inc.
12 VENEER
QUARRY TILE

Reception area, Griswold-Eshleman Advertising, 55 Public Square, Cleveland 13, Ohio. Design by GF Studios.

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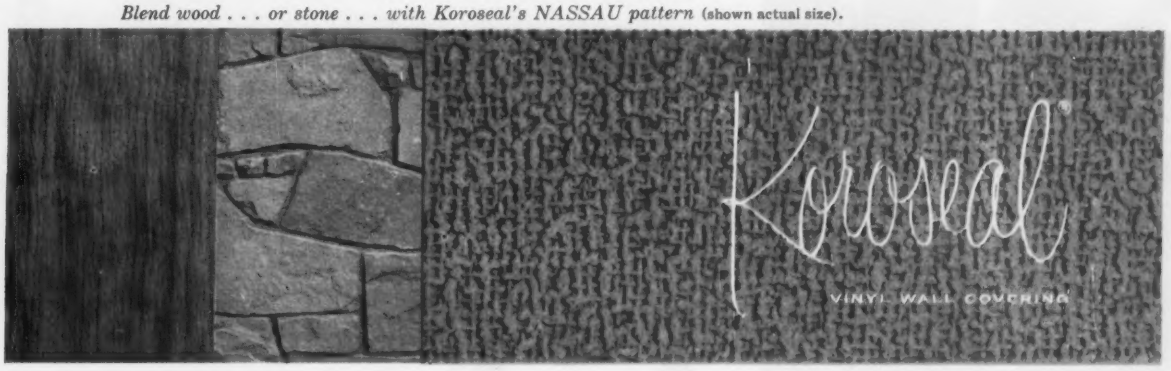
Blend wood . . . or stone . . . with Koroseal's NASSAU pattern (shown actual size).



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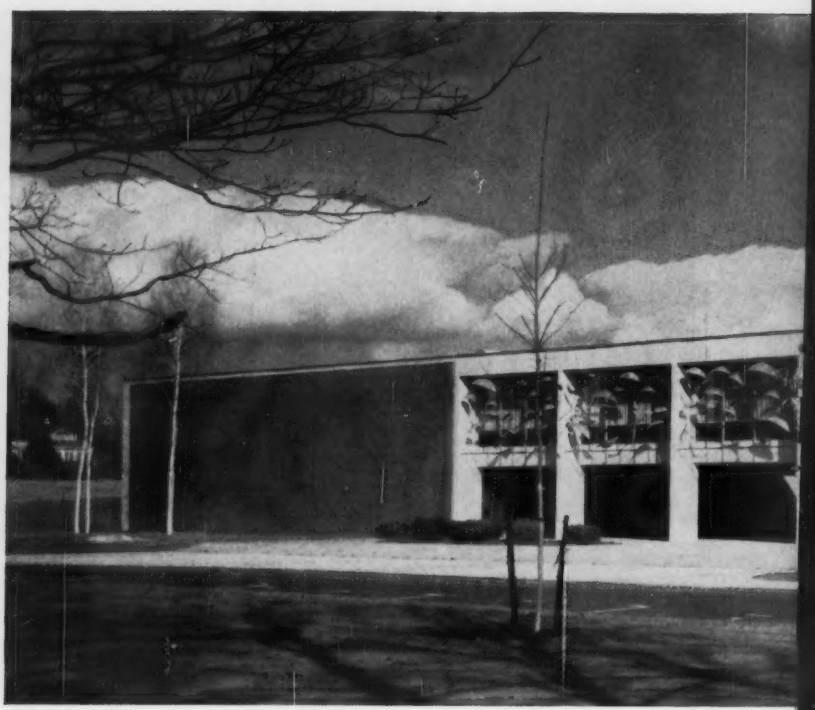

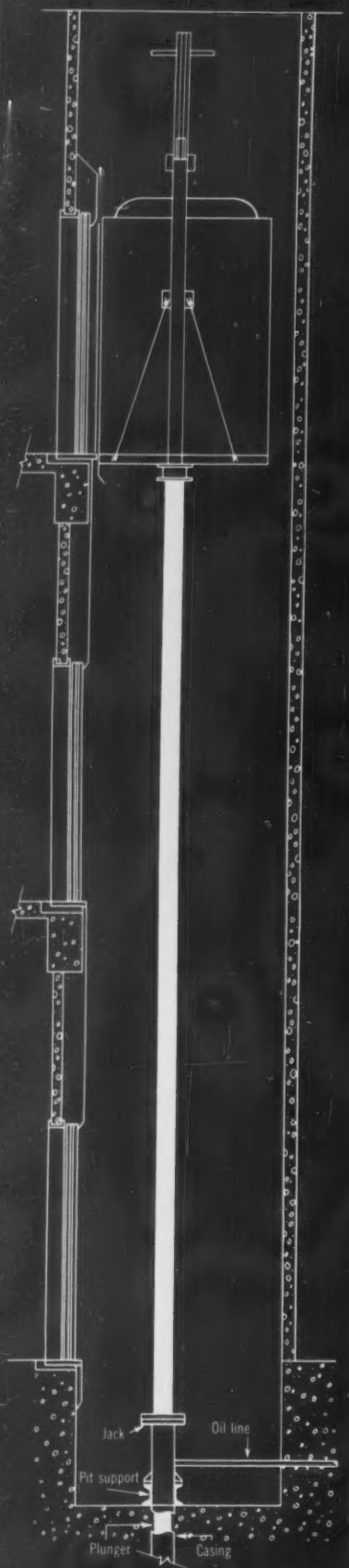

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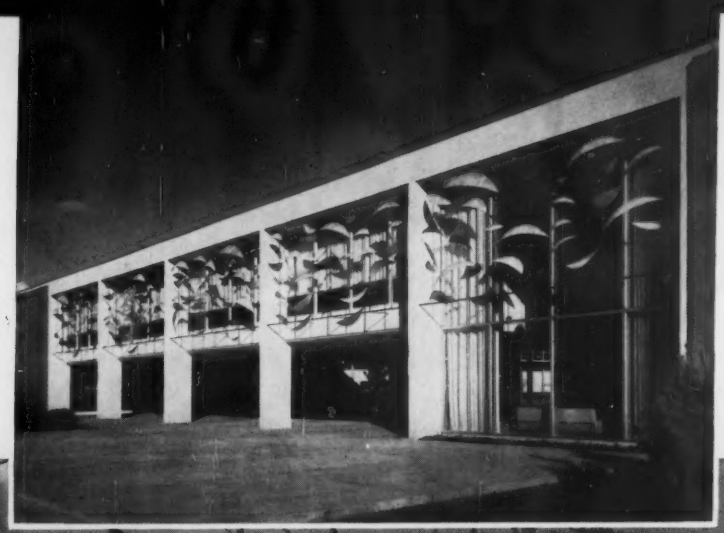

INTERNATIONAL HEADQUARTERS BUILDING OF DORR-OLIVER, Stamford, Conn.

ARCHITECTS: Sherwood, Mills and Smith

GENERAL CONTRACTOR:
Deluca Construction Co.

Rotary Oildraulic Passenger Elevator installed by Franchised Distributor Bay State Elevator Co.

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February 1960

PROGRESSIVE ARCHITECTURE

pa

cover Drawing of street in Place Ville Marie (see page 123) drawing from I. M. Pei's office

practice of architecture

7 **It's the Law** by Bernard Tomson and Norman Coplan
9 **Architect-Owner Contract in Israel**
11 **Specifications Clinic** by Harold J. Rosen
13 **Mechanical Engineering Critique** by William J. McGuinness

51 **Views**

P/A NEWS REPORT

67 **P/A Design Awards Banquet and Seminar Held in New York**
71 **Harvard Health Center Leads Off Redevelopment Plan**
73 **New Uses Found for Asbestos-Cement in Research House**
75 **Personalities**
86 **Washington News**
93 **New Products**
105 **Manufacturers' Data**

123 **The Story of Place Ville Marie** by Jan C. Rowan
I. M. Pei & Associates, Architects and Planners;
Affleck-Desbartes-Dimakopoulos-Lebensold-Michaud-Sise, Associated Architects
Montreal, Canada

136 **Some Aspects of South American Planning**
By Sibyl Moholy-Nagy

fields of practice

143 **Clinics: Work of Paul Hayden Kirk, Associates**
146 **Pero Clinic: Everett, Washington**
150 **Medford Clinic: Medford, Oregon**
152 **McNair Clinic: Medford, Oregon**
156 **Smith Clinic: White Center, Seattle, Washington**

selected details

155 **Wall Screen,** McNair Clinic
159 **Wall Screen,** Smith Clinic

interior design data

160 **Natural Lighting in Churches** by Barbara J. Melnick
161 **First Christian Church: Minneapolis, Minnesota**
Thorsov & Cherny, Inc., Architects
162 **New York Mission Society: New York, New York**
Edgar Tafel, Architect
164 **Christ Presbyterian Church: Terra Linda, California**
Campbell & Wong, Architects

materials and methods

166 **Acoustical Considerations for Hospital Planning**
170 **Prefab Copper Tubing**
172 **Electrical Distribution: Forestry Laboratory**
174 **Simplified Three-Hinge Arch Computation**
By Paul Chelazzi

189 **Reviews:** Unique Community Facilities for the Handicapped
260 **Jobs and Men**
264 **Advertisers' Directory**
266 **P.S.:** Who Would Say NO?

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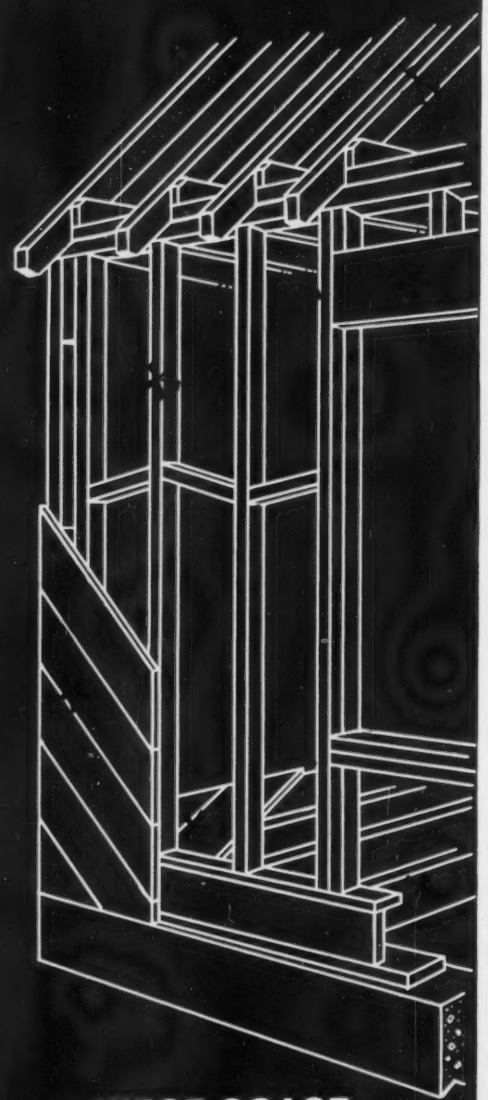

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2x8	16" o.c.	10'-8"	9'-6"
2x10	16" o.c.	14'-8"	13'-0"
2x12	16" o.c.	17'-0"	15'-4"

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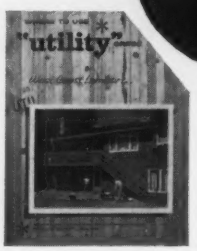

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Negligent Issuance of Certificate of Payment

It's the Law Column by Bernard Tomson and Norman Coplan

P/A Practice of Architecture ***column describing a case where an architect was sued for negligent issuance of a certificate of payment.***

Can an architect be held responsible for a loss sustained by the surety on the contractor's performance and payment bond? A provision in a building contract, which requires the architect's certificate or approval of the work before the contractor is entitled to payment, is generally included for the benefit of the owner. It has been held by the Supreme Court of Mississippi, however, that the negligent issuance of such certificate or approval constitutes a breach of duty on the part of the architect, not only to his client, but to the contractor's surety as well (*State of Mississippi* v. *Malvaney,* 72 So. 2d 424).

In the Mississippi case, a school district had retained an architect to prepare plans and specifications, and to supervise the construction of an auditorium and cafeteria building. Upon completion of such plans and specifications, the school district entered into a contract for the construction of the project for the total contract price of $93,577.00. The building contract provided for monthly progress payments at the rate of "85% of the value, based on the Contract prices, of labor and materials incorporated in the work, and of materials suitably stored at the site" and "final payment shall be due thirty days after substantial completion of the work provided the work be then fully completed, and the contract fully performed." The building contract also provided that the architect would make a final inspection of the project, and that if he found the work acceptable and the contract fully performed, he would issue a final certificate approving the balance found to be due the contractor. In this connection, the building contract further provided that "before issuance of final certificate, the contractor shall submit evidence satisfactory to the architect that all payrolls, material bills and other indebtedness connected with the work, have been paid."

Subsequent to the certification by the architect that the contract had been substantially completed with minor exceptions, the contractor requested that $11,000.00 out of $14,000.00 which had been retained by the school district, be paid him. The architect wrote to the Board of Trustees of the school district, stating that the contractor wished to draw $11,000.00 of the retained percentage, and that if the school board wished to make this advance, it would be with the architect's approval. This letter was delivered by the architect to the contractor, who did not submit it to the Board of Trustees, but rather presented it to the office of the County Superintendent of Education, and payment by that office was made to the contractor based upon the architect's letter. At the time the contractor was paid the $11,000.00 from the retained percentage, he had outstanding unpaid claims for labor and material which had gone into construction amounting to over $17,000.00 The contractor subsequently advised his surety that he was unable to proceed further with the contract, and that he would, of necessity, default in its performance. The surety completed the contract and paid the outstanding bills for labor and material.

The surety instituted suit against the architect, and the County Superintendent of Education, contending that they were at fault in permitting the contractor to collect the retained percentage at a time when subcontractors and material men had not been paid, and thereby depriving the surety of the protection afforded by the retainage funds. The surety contended that the architect did not exercise due diligence to ascertain whether there were outstanding bills for labor and materials before approving payment of part of the retained percentage, and that this negligent performance created liability in the architect for the losses sustained by the surety.

It was, on the other hand, contended by the architect that there was no contractual relationship between himself and the surety, and that he, therefore, owed no duty to the surety. The architect further asserted that the surety itself had been contributorily negligent in that it made no inquiry about the performance of the building contract, and indicated no interest in the contract until after the contractor's default.

The Supreme Court of Mississippi ruled that under a construction contract which provides for progress payments and a retained percentage, the retainage is for the mutual benefit of the owner and surety, and that the surety may assert a claim to the retainage funds under the equitable doctrine of subrogation. The court further concluded that the surety had lost its right of subrogation as the result of the failure of the architect to ascertain whether bills for labor and materials had been paid prior to approving payment of the retainage funds. In reply to the architect's contention that he owed no contractual duty to the surety, the court stated:

"Under the provisions . . . of the Mississippi code . . . , the contractor was required to furnish bond, not only for the completion of the building, but with the additional obligation that he would make prompt payments to all persons supplying labor and materials for the job . . . the architect prepared the contract with a form provided by him, and he knew its provisions with reference to the retainage and the purpose thereof . . . The architect knew or should have known, when he authorized the release of the $11,000.00 retainage that the surety would be deprived of the protection thereof in the event of default on the part of the contractor . . . in paying outstanding bills for labor and material. . . .

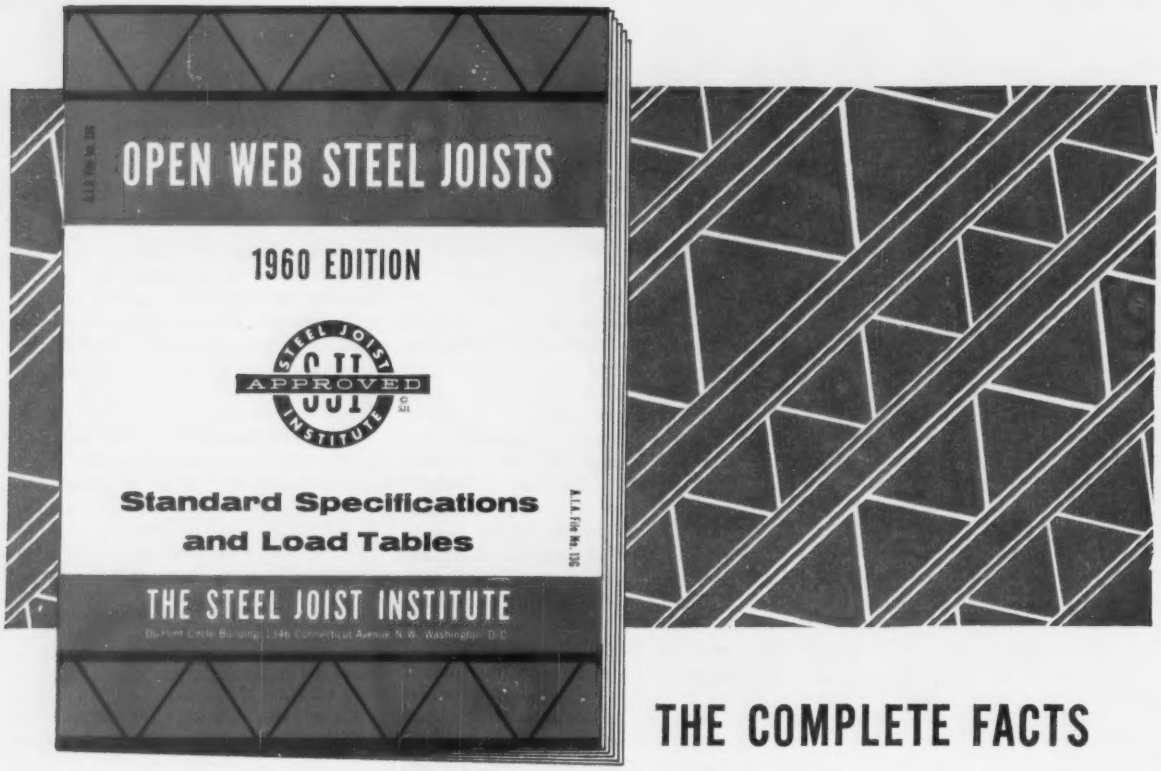
"The contractual arrangement here consisted of the building contract, including the plans and specifications, and the bond, which incorporated the contract as a part thereof with the mutually interdependent obligations and rights therein contained. The duties of the architect were clearly defined in this contract. One of his very important duties was not to approve progress payments in excess of 85% of the contract price, and before final payment . . . to require the contractor to submit satisfactory evidence that all payrolls and other indebtedness connected with the work have been paid.

"This duty was owing to the trustees and the surety, for whose mutual benefit and protection the retainage funds were provided. A contractual relation between the architect and the surety was not requisite to the existence of this duty. It arose out of the general contractual arrangements which contain mutually interdependent rights and obligations."

The Supreme Court of Mississippi also rejected the architect's contention that the surety was contributorily negligent in failing to exercise any interest or supervision in respect to the contractor's performance until after his default. The court pointed out that the surety was not required to take any action, nor did it fail to take action, which would directly relate to the release or holding of the retainage funds.

A rule that the architect's certificate or

(Continued on page 9)



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Negligent Issuance (continued)

approval is for the benefit of both the owner and the contractor's surety, raises many complex questions. It is well settled in many states that an owner may waive the requirement of the architect's certificate or approval as a condition of payment. If, however, the architect owes a duty to the surety, the right of the owner to waive the architect's certificate must obviously be affected. In any event, and irrespective of the legal relationships between the parties to a building contract, it is apparent that the architect requires better tools for his supervision of the contractor. In this connection, this column has recommended that the building contract include a provision which would authorize a periodic audit of the contractor's books and records by the owner or architect. (See "IT'S THE LAW," SEPTEMBER, OCTOBER, NOVEMBER 1953 P/A.)

New Edition Suggests Proper Bidding Procedure

Specifications Clinic by Harold J. Rosen

P/A Practice of Architecture *article summarizing recommendations from the newly-revised* Guide to Bidding Procedure, *for which the Associated General Contractors of America and the AIA were jointly responsible.*

The Associated General Contractors of America, together with the American Institute of Architects, have jointly issued the Third Revised Edition—dated February 1959—of the *Guide to Bidding Procedure*. This suggested guide to bidding procedure on building construction is recommended for use in private work when competitive lump-sum bids are requested and is also applicable to public work insofar as the requirements of public authorities permit.

The information contained in the *Guide* is of extreme interest to specifications writers in the preparation of documents for bidding purposes, since it establishes certain procedures that can eleminate ambiguity and wasteful efforts.

With respect to contract documents, the *Guide* recommends that the Standard AIA Form of Agreement and AIA General Conditions of the Contract form a part of every contract. These have been drafted with careful regard to the rights and responsibilities of both the owner and the contractor and outline the appropriate duties and functions of the architect. They are national standards, recognized as such by all concerned. Where use differing from the standard forms is intended, special forms of contract should be included in the documents furnished to bidders.

Where time of completion is of importance to the contract, the *Guide* recommends that the architect set a completion date, and where this time of completion is of essence, a liquidated damage clause may be included. Where a penalty clause is specified for delayed completion, a bonus clause for earlier completion should also be included.

The manner of drawing presentation is also spelled out in the *Guide*. Recommendations include a request for clear, accurate, and adequately-dimensioned drawings using nationally-accepted standard symbols to illustrate materials. Mechanical details necessary for clarification should be shown on separate drawings.

The *Guide* recommends the following provisions concerning specifications:

"(a) The specifications should be complete, clear and concise with adequate description of the various classes of work segregated under the proper sections and headings. In order to make certain that work or materials described in the specifications are under the proper sections or headings, the architect should, insofar as practicable, familiarize himself with local trade jurisdictions in the areas wherein the buildings he designs are to be built.

"(b) Each section and heading should be identified for easy reference.

"(c) Allowances which are to be carried by the general contractor should be grouped in a separate section called 'Allowances.' Allowances which are to be carried by subcontractors should be clearly indicated in the sections of the specifications involved.

"(d) Standard trade terms for materials and processes should be used.

"(e) The use of the term 'or equal,' without prior determination of materials that will be accepted as equal, frequently results in differences of opinion and misunderstanding and should be eliminated. This may be done in the following ways:

1 By specifying that the contractor's proposal shall be based on the products specifically named in the specifications, with a provision that the contractor may, if desired, submit with his proposal products of other manufacturers for similar use, providing the difference in cost, if any is stated in each case.
2 By specifying two or more materials any one of which is acceptable, the choice being left to the bidder.

"(f) If a specific method is specified as well as a guarantee of the result, the contractor should be given the right to question the method if in his judgment it may not produce the required result, in which case an alternative method which would be guaranteed by the contractor should be determined by agreement or arbitration."

The provision concerning allowances is not very clear. How does a specifications writer know which general contractor will be the successful low bidder and anticipate what trades the general contractor will subcontract, and what trades the general contractor will do with his own forces? The allowances should be clearly indicated in all trade sections, and if necessary may also be compiled and grouped in a separate heading in the Supplementary General Conditions.

The *Guide* recommendations on guaranteeing results should be pondered by every specifications writer. It may be legally indefensible to spell out in the specifications a specific method for performing certain work and then require the contractor to guarantee the result, inasmuch as the specification may be followed to the letter and the required result not achieved. Instead, a performance type of specification may be used, requiring the achievement of certain results, and allowing the contractor a wide latitude in using his judgment and experience to arrive at a method that he will guarantee.

Where insurance and bonds are required, the *Guide* recommends that the specifications should clearly enumerate the type and coverage required.

The *Guide* makes additional recommendations concerning adequate time to prepare bids, alternates, unit prices, addenda, and time for receipt of bids.

This *Guide to Bidding Procedure* should be in the hands of all specifications writers. Copies may be obtained by writing: Associated General Contractors of America, 20th and E Streets, N.W., Washington 6, D.C.

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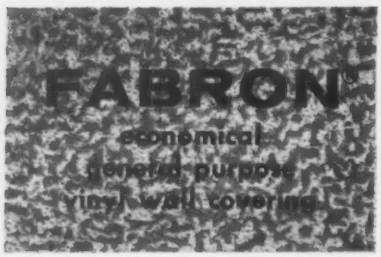

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Architect-Owner Contract in Israel

P/A Practice of Architecture ***page illustrating an architect-owner contract used by the Israel Union of Engineers and Architects, Israel. The document was brought to the Editors' attention by Judge Bernard Tomson. Excerpts from a translation follow.***

After a statement of the architect's responsibility, not so different from the standard AIA Contract, the Israeli form states:

"In everything concerning the above work the architect is to be the representative of the building owner in all requirements of the building laws and in the building contracts made with the advice and knowledge of the architect.

"The building owner agrees not to do anything in connection with the erection of the building without the previous approval of the architect."

Furthermore, the Contract states:

"The building owner authorizes the architect to represent him in all dealings with the government and with all interested parties in the erection of the building and approves beforehand the acts of the architect.

"The architect, on the other hand, agrees not to undertake any legal or financial obligations without the consent of the building owner."

In addition to stated percentage fees, the Contract provides that:

"The following services are to be paid by the building owner:

1 The cost of surveying the plot or existing buildings.

2 The architect's traveling expenses in connection with this agreement.

3 The cost of printing of the certificates and plans in addition to the one copy which the architect has to supply, and the cost of preparing the plans of the building.

4 The cost of the local management of the construction.

5 Special plans and services requiring participation of particular experts in their preparations, such as special examinations of land, plans for gardens, heating, refrigeration and illumination, plans of installations for the hot water system, electrical wiring, etc.

6 Plans and explanations required by the authorities for town buildings.

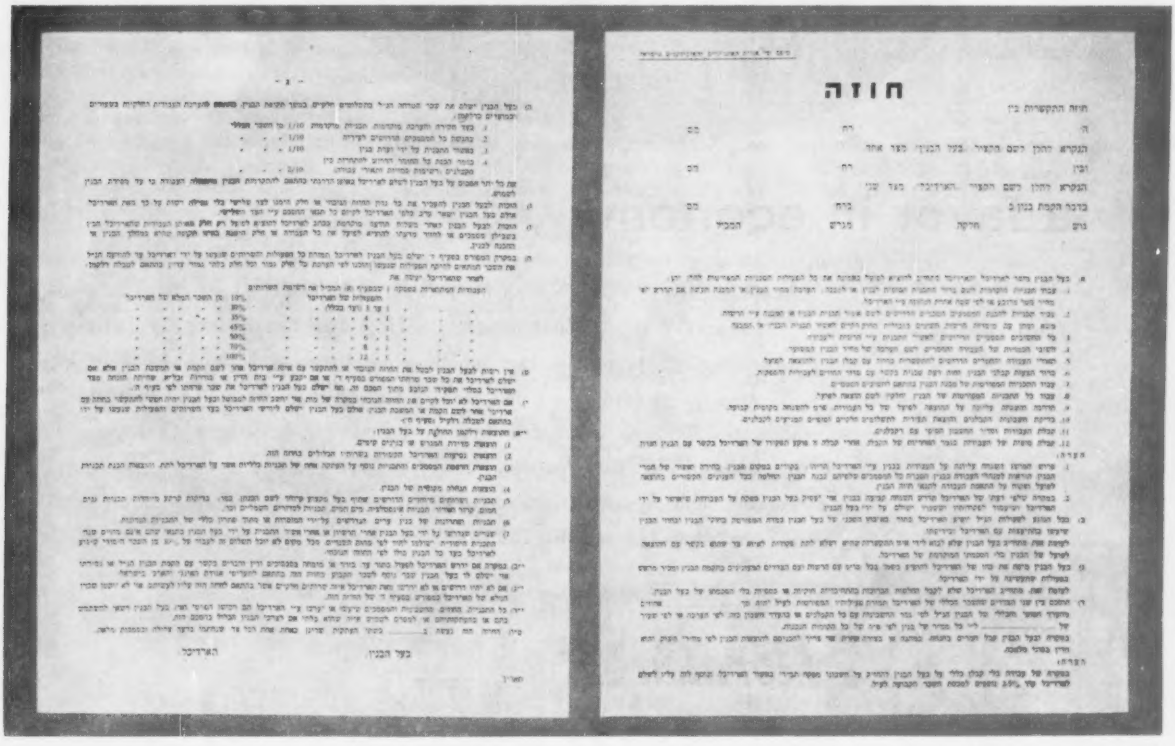
7 Changes made by the building owner after the permit was issued or after the plan was approved should be paid for according to the nature of the changes, but in any case this payment is not to exceed 30% of the basic amount due the architect under this agreement."

With regard to arbitration:

"In the event that the architect is required to appear as a witness, arbitrator or expert, in conflicts or trials in connection with the erection of the building or its completion, the building owner is to pay him an additional amount in accordance with the tariffs of the Israel Union of Engineers and Architects."

And on ownership of plans:

"All the plans, agreements, accounts, and certificates made or prepared by the architect are his private property and the building owner is prohibited to make use of them or their copies or to transfer them for any other use except for this building."

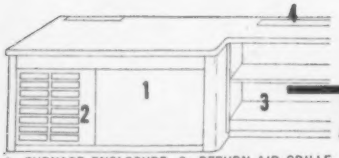


חוזה

a favor in economy

Apple of the eye that's looking for low-cost classroom comfort! Room by room, gas-fired **Norman Schoolroom Heating and Ventilating Systems** automatically: (1) provide heat rapidly when it is needed, (2) blend the proper amounts of outdoor air and recirculated room air to cool and ventilate the classroom, and (3) distribute tempered air evenly along and out from the exposed wall. Each Norman forced warm-air system is an easily installed package with pre-wired, factory-assembled heating and ventilating unit, controls and partially assembled Util-i-Duct® Bookshelf sections.

Write Today for New 1960 Comprehensive Manual.



1. FURNACE ENCLOSURE 2. RETURN AIR GRILLE
3. UTIL-I-DUCT® BOOKSHELF 4. AIR DIFFUSER

Norman®

PRODUCTS CO. • 1150 Chesapeake Ave. Columbus 12, Ohio

Valance System Both Heats and Cools

Mechanical Engineering Critique by William J. McGuinness

P/A Practice of Architecture *column on mechanical and electrical design and equipment, devoted this month to the new Valance System of heating and cooling.*

Rapid changes in residential architecture have created a situation in which the heating and cooling elements have had virtually "no place to go." Locations have finally been found for them, after considerable study. The study has often resulted in better conditions of comfort in addition to an improved esthetic. Free-standing cast-iron radiators disappeared to be reincarnated as flush, fin-tube convector cabinets below windows. As window sills were lowered, the convector was stretched into a baseboard heating element. Glass-to-the-floor designs compelled us to radiant heating in floors and ceilings. Unsightly cooling units of window or through-the-wall type have been incorporated into central units. This has promoted forced-air systems for heating and cooling. Glass walls have demanded floor registers directly below them.

The strip convector has now reappeared in a new form to furnish an interesting, efficient, and sightly method of heating and cooling by hot or chilled water. Proved, patented and installed in many houses, the new method is the result of six years of research and tests by John B. Pierce Foundation in New Haven, Connecticut. It has been described by George B. Bailey, Executive Director, and Robert J. Lorenzi, Research Engineer, both of the Foundation. Placed close to the ceiling, the convector produces a thin layer of very warm air to create a ceiling radiant panel, with the same characteristics as a radiant ceiling heated by imbedded water pipes or electric-resistance wires. The sides of the valance-cover act as additional radiant surfaces. Convection is at a minimum, but the radiant effect of the ceiling warms the floor directly below to a comfortable temperature. Temperatures throughout the heated space compare favorably in degree and in uniformity with those of other systems.

Quite in contrast to its radiant performance in winter, the convector acts for cooling almost wholly as a convector. The warm room-air is cooled by the chilled water in the convector and drops gently down the exterior walls for general cooling effect. Dehumidification is effected by the condensation of the room moisture on the convector fins—which are pointed at the bottom—to drop this water into the plastic trough which is pitched to a drain.

The heating output of the valance element does not exceed 450 Btu/hr per linear foot. This is only half of the output of some baseboard elements. A good deal more valance length is required than would be necessary for baseboard. The unit cooling rate of the valance is about 200 Btu/hr. The same length of valance is used for both heating and cooling. This can be accomplished if a study is made to determine a fixed ratio between the temperatures of hot and chilled water. In spite of the greater length of convector element, experience shows that the over-all cost of the installation is not necessarily greater than that of a baseboard system. Among the reasons for this is the fact that the valance installation consists of straight runs of series loop piping; these are not interrupted by doorways and other obstacles which would call for dropped loops or other offsets. The vertical runs of supply and return pipe, and of condensate drain pipe, can be located in stud partitions.

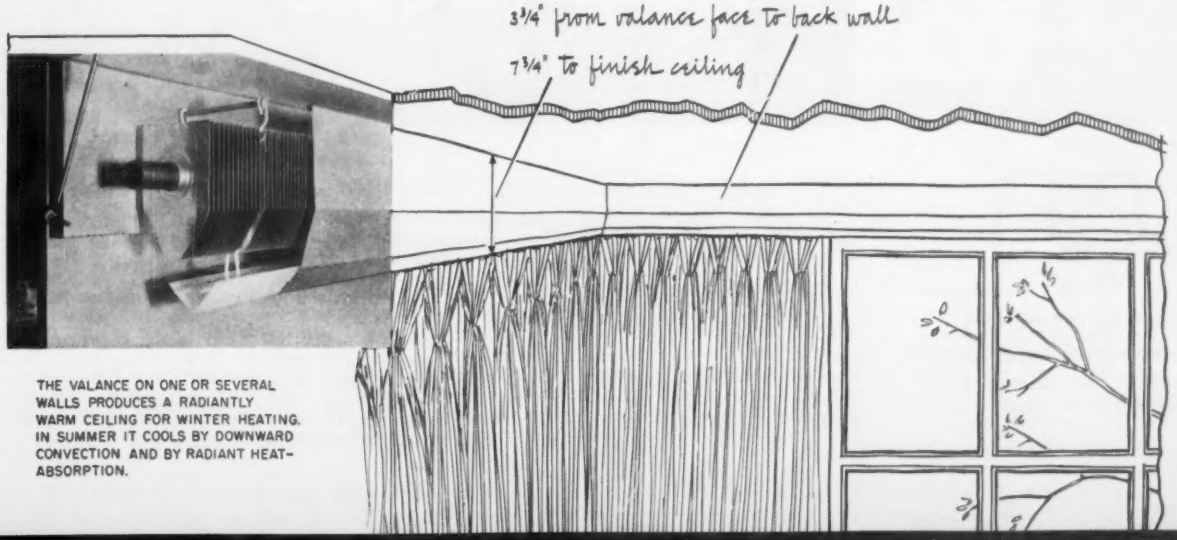
There are some advantages over baseboard and forced-air systems. Pierce Foundation tests showed clearly that dust does not rise in appreciable quantities to the level of the valance. This fact and the reduced velocity of the small amount of convected air combined to preclude the formation of dust streaks on the ceiling and upper walls. This was noticeable not only in the tests but also over several years in a full-scale permanent installation at the home of George B. Bailey. The system is perfectly quiet, since there is no circulation of air except the motion of the convection currents.

If cooling is included in the operation, it is necessary to cover and insulate supply and return pipes that are concealed or not served by the drip-trough. This is to prevent condensation on the cold pipe surfaces. Hydraulic and electric interlocks prevent the simultaneous delivery of heated and chilled water.

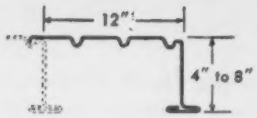
It is estimated that the cost of the water chiller, controls, and extra piping needed to add the cooling feature is about $1200. Zoning is accomplished in the same way as in all forced-water systems, namely by separate circulators, thermostats, and other controls. It is recommended that several zones be used to adapt the system to sun-effect, orientation and room-use.

A summary of the advantages of the Valance System:

Competitive in cost,
Quiet,
Has advantages of radiant heating,
Minimum dust streaking,
Fins free of dust clogging,
Comfort independent of ceiling height,
Saves space on floor,
Simpler piping,
Room temperatures uniform,
Adapts to sliding glass doors,
Doubles as a drape valance.



THE VALANCE ON ONE OR SEVERAL WALLS PRODUCES A RADIANTLY WARM CEILING FOR WINTER HEATING. IN SUMMER IT COOLS BY DOWNWARD CONVECTION AND BY RADIANT HEAT-ABSORPTION.



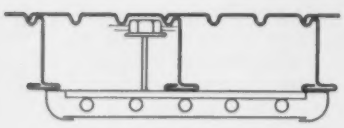
T-STEEL — New! Galvanized. For clear spans to 32'0". Adaptable to acoustical and flush, luminous ceiling treatments. Provides superior diaphragm to transmit seismic and wind loads.

Ceiling Treatments with T-Steel Deck

Standard Tile or Board

Corrugated Diffuser

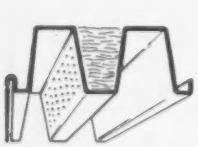
Exposed (Underside painted for increased reflection)



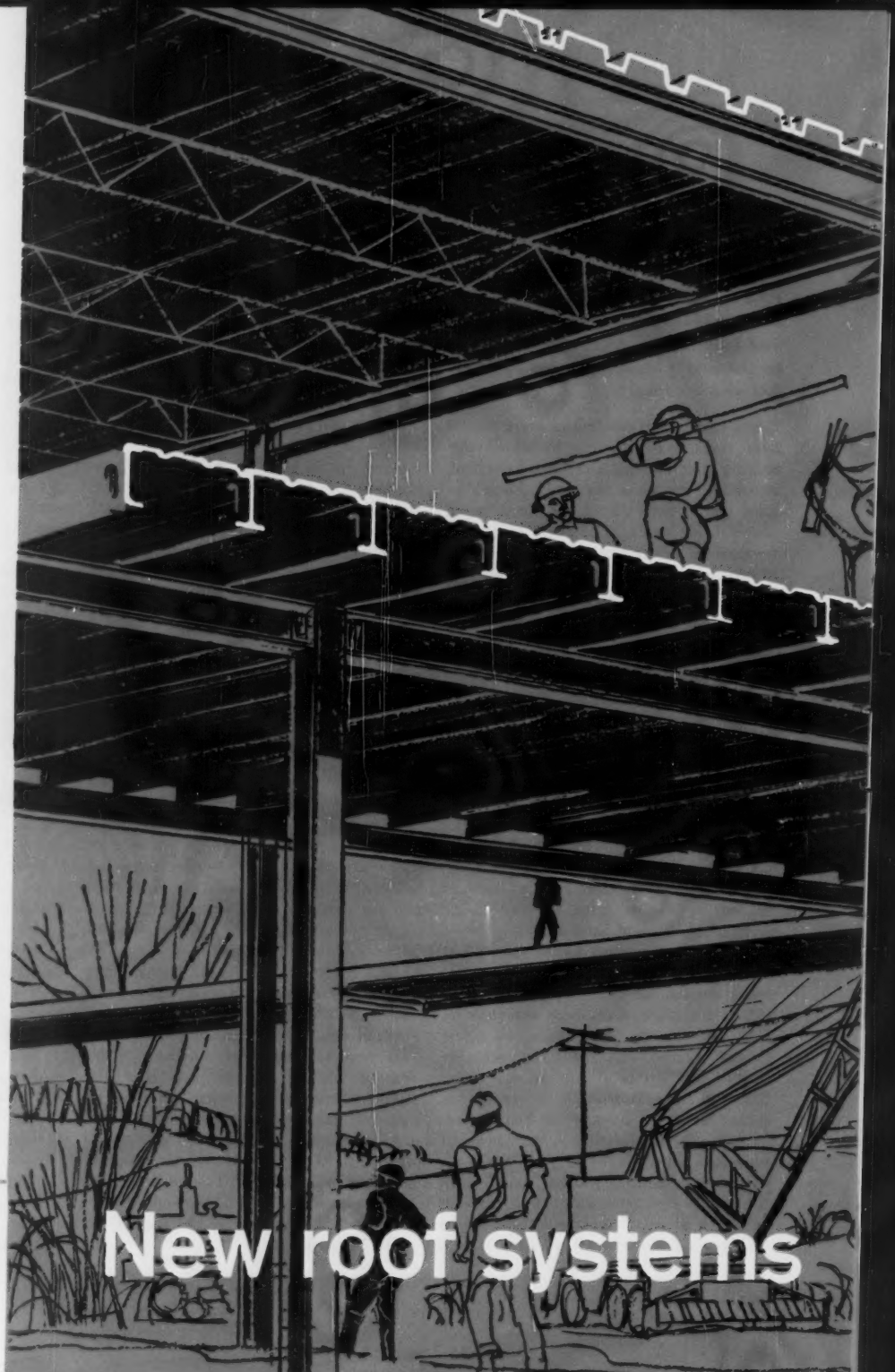
Surface-mounted Fixture

Lath-and-Plaster Fireproofing

TYPE B ACOUSTIDECK
For purlin spacings from 6′ to 10′.
Uses minimum of 1″ rigid insulation board.



TYPE C ACOUSTIDECK
For purlin spacings from 10′ to 24′.
Uses minimum of 1½″ rigid insulation board.



New roof systems

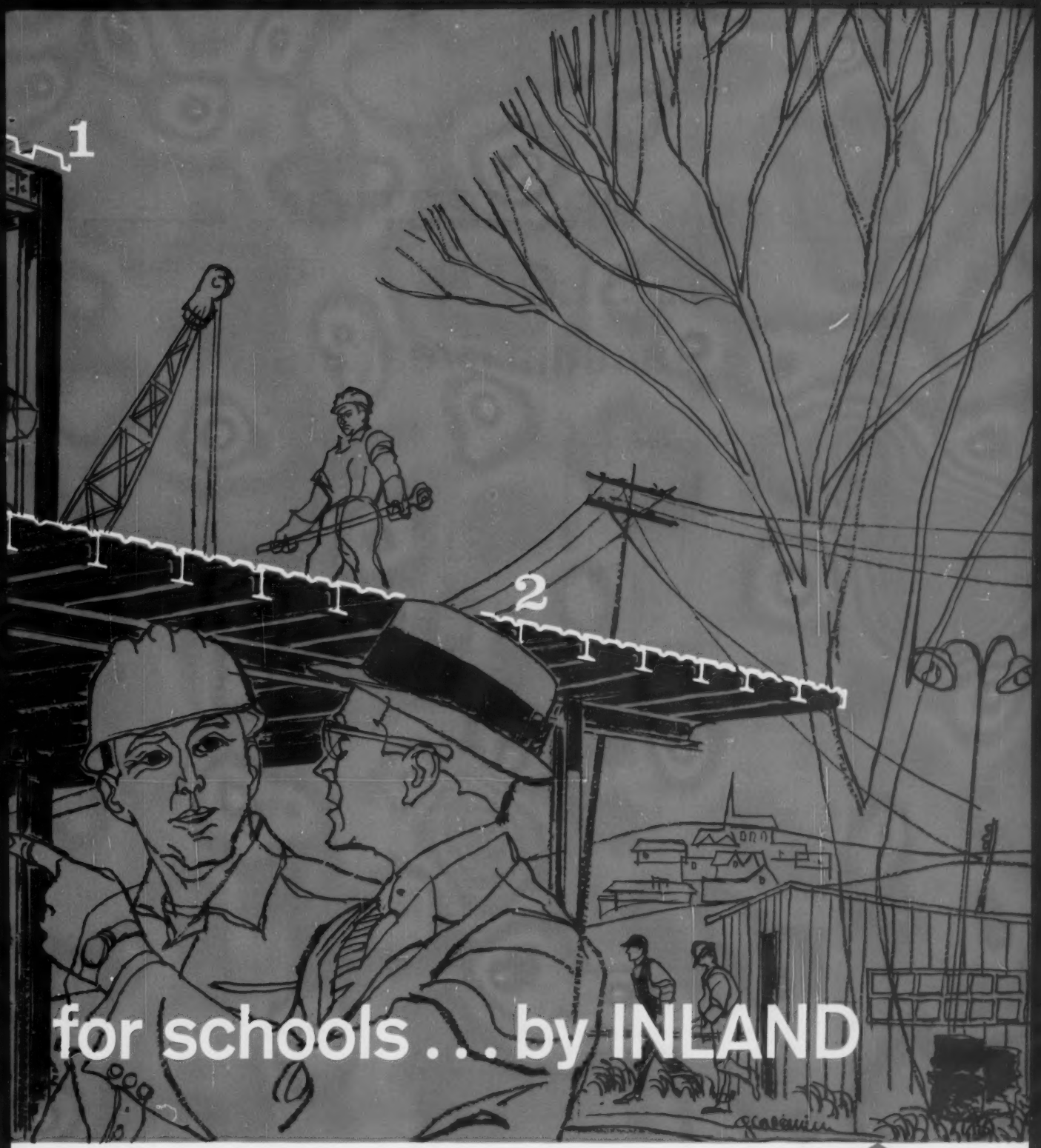
Complete structural systems that broaden your latitude in planning ceilings, lighting, acoustics—within realistic budget boundaries

1. Acoustideck for gymnasiums, other activity areas

Two-in-one panel combines steel roof deck and acoustical ceiling. Provides acoustical treatment that is considerably less subject to damage than other types — Noise Reduction Coefficient of .70. Installed by welding in the same manner as regular steel deck.

Acoustideck has all the additional advantages of steel-deck construction: It is erected fast — in any weather that a man can work. Its Bonderized baked-enamel prime finish cuts painting costs in half. The interesting ribbed underside can be left exposed as an attractive ceiling.

ATLANTA, BALTIMORE, BUFFALO, CHICAGO, CINCINNATI,



2. New Inland T-Steel Roof Deck for clear-ceiling classrooms

Especially suitable over classrooms of 26′ to 32′ spans — or other areas where you want a large expanse of unbroken ceiling surface for a contemporary feeling.

You can provide practically any acoustical treatment — T-Steel permits installation of acoustical tile at an economy no other roof system can match. You can provide a flush, luminous ceiling — or you can leave the underside of T-Steel exposed and painted.

T-Steel deck provides a superior diaphragm to resist seismic and wind thrusts . . . as proved by full-scale shear tests conducted by independent engineering firms.

Write for catalogs 240, 241, and 246 or See Sweet's, sections 2c/Inl and 11a/In for full information on T-Steel and Acoustideck. Inland Steel Products Company has developed a force of trained sales engineers who are capable of giving you the benefit of their diversified experience on specific problems. Write or call your nearest Inland office.

member of the INLAND steel family

ENGINEERED PRODUCTS DIVISION

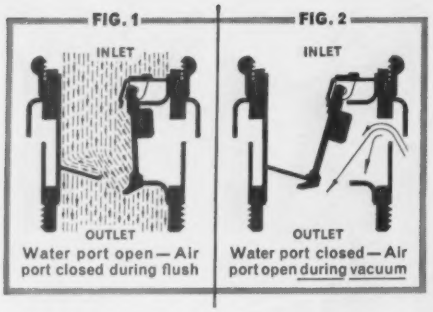
INLAND STEEL PRODUCTS COMPANY

Dept. B, 4069 West Burnham Street
Milwaukee 1, Wisconsin

CLEVELAND, DALLAS, DENVER, DETROIT, KANSAS CITY, LOS ANGELES, MILWAUKEE, MINNEAPOLIS, NEW ORLEANS, NEW YORK, ST. LOUIS

You pay no more for unequalled SLOAN quality...

Double PROTECTION with SLOAN Vacuum Breakers

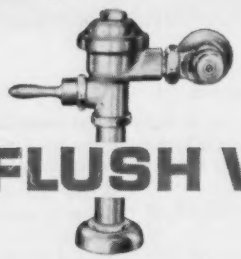


Municipal plumbing codes as well as U. S. Government specifications stipulate that all plumbing fixtures be protected against the possibility of back-syphonage by either an air gap, where practicable, or by an approved vacuum breaker.

Sloan Valve Company pioneered the development of vacuum breakers and was first to gain approval from the National Plumbing Laboratory which formerly tested such devices. Sloan Vacuum Breakers, sensitive to the slightest vacuum, incorporate double protection to prevent back-syphonage as follows:

> When a vacuum occurs in the supply line (as indicated in Fig. 2), two things happen simultaneously. The swinging check instantly seats against the water port to prevent back-syphonage; and, as it swings, it opens the air port, admitting full atmospheric pressure to the fixture, which again prevents back-syphonage.

This superior vacuum breaker represents another achievement of Sloan engineering, constantly employed to assure outstanding products through research. It is one more example of that bonus of quality you expect from Sloan. And, since you can have Sloan quality at no extra cost, why not make sure you get it.



SLOAN FLUSH VALVES

SLOAN VALVE COMPANY • 4300 WEST LAKE STREET • CHICAGO 24, ILLINOIS

IT'S HERE

NEW XL BUStribution® Duct

combines safety and ease of installation never available before!
Made by BullDog, the originators of Bus Duct systems.

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provid
proper as
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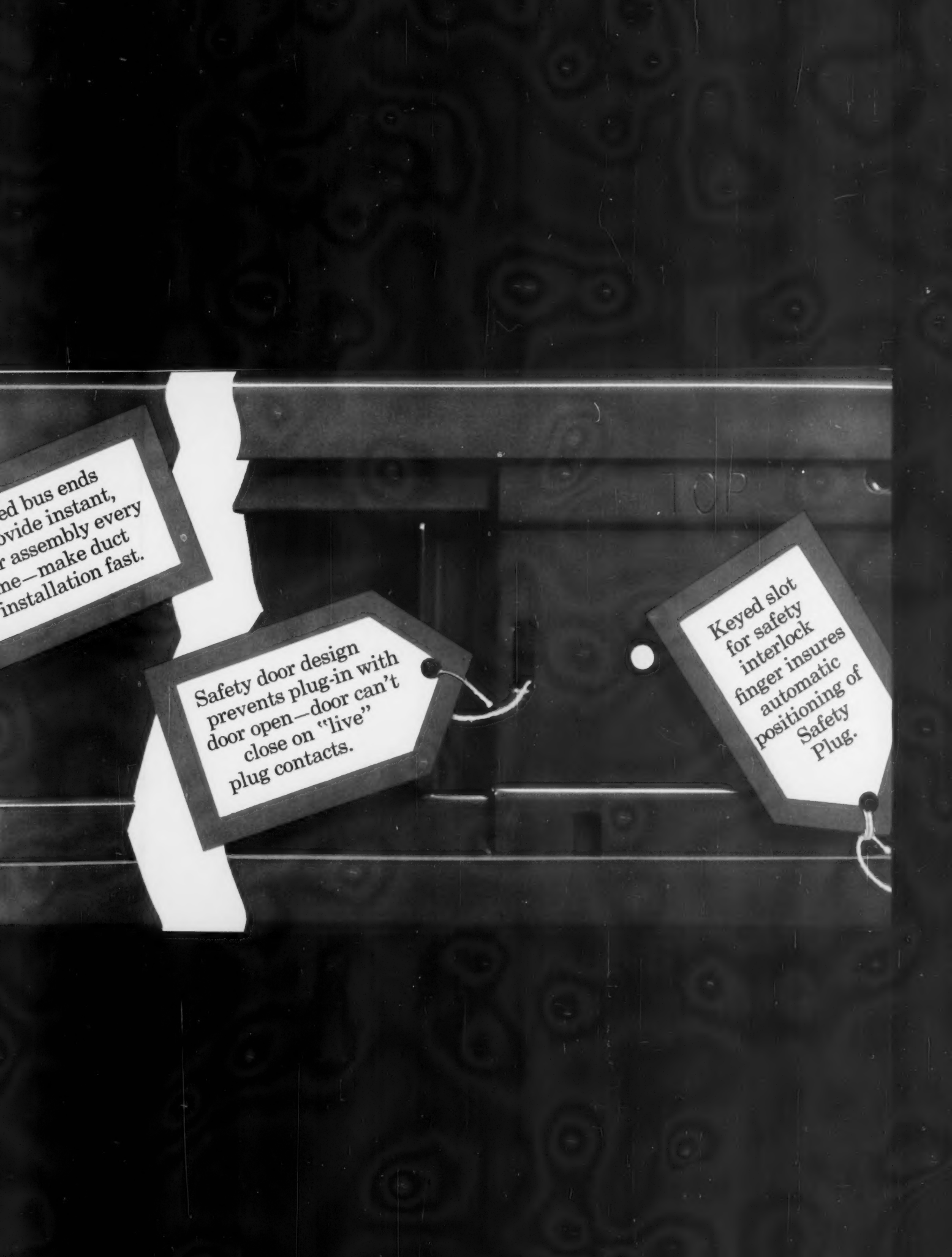
ed bus ends
ovide instant,
r assembly every
ne—make duct
installation fast.
Safety door design prevents plug-in with door open—door can't close on "live" plug contacts.
Keyed slot for safety interlock finger insures automatic positioning of Safety Plug.

Butyl sleeve insulates full length of each bus bar.
Single integral bolt locks quickly. Holds joints under a ton of pressure.

BULLDOG

gives you one source for fully-engineered components.

BullDog provides a complete line of fully-engineered components for use with new XL BUStribution Duct and Safety-Plug. You can get everything you need from a single convenient source—your local BullDog distributor.

IMPORTANT SPECIFICATIONS

of new XL BUStribution Duct

LOW VOLTAGE DROP . . .
as low as one-half that of other plug-in duct systems.

•

50,000 RMS SHORT-CIRCUIT RATING
in all sizes above 225 amps.

•

SINGLE-BOLT BAR CONNECTION
in all sizes up to 800 amps.
(800 to 1000 amps.—2 bolt connection)

•

FULL BUTYL INSULATION

•

TEN-FOOT SUPPORTING SPANS

•

COMPACT:
30% smaller, 25% lighter than other duct systems

BULLDOG ELECTRIC PRODUCTS DIVISION
I-T-E CIRCUIT BREAKER COMPANY
BOX 177 • DETROIT 32, MICHIGAN

FORM NO. XL-1

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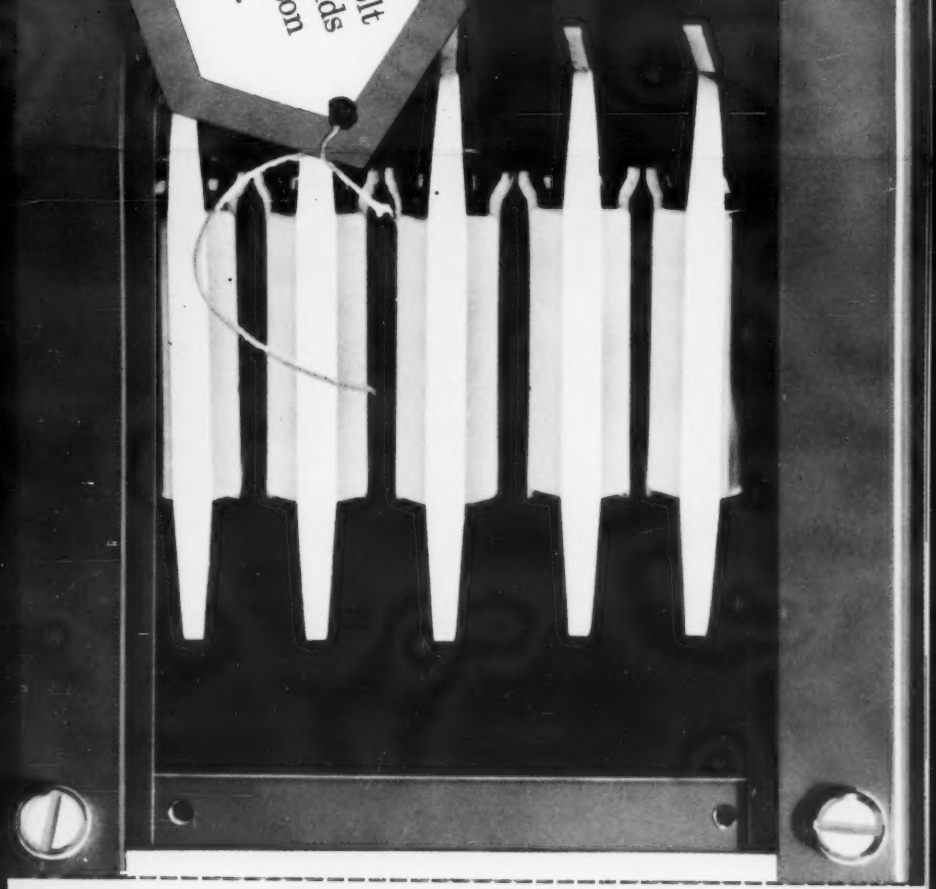
Butyl sleeve insulates full length of each bus bar.
Single integral bolt locks quickly. Holds joints under a ton of pressure.



FOR MORE INFORMATION, USE THIS COUPON

BullDog Electric Products Division
I-T-E Circuit Breaker Company
Box 177, Detroit 32, Michigan

Please send me detailed information on the new BullDog XL BUSTRIBUTION® DUCT.

NAME _____ **TITLE** _____

COMPANY _____

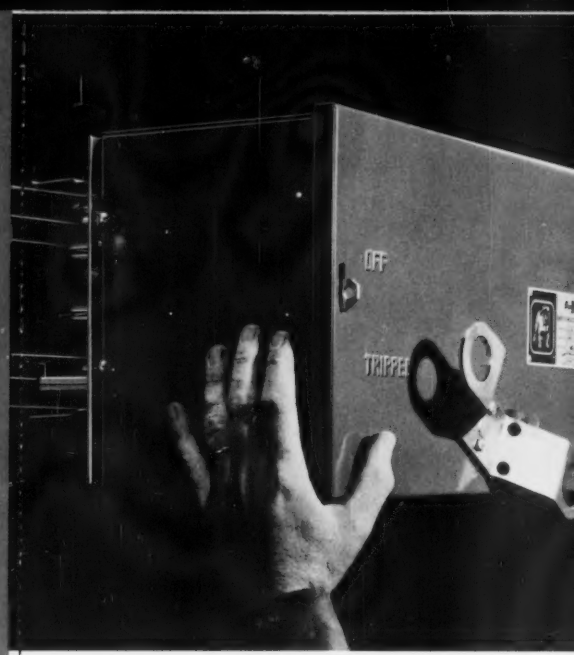
ADDRESS _____

CITY _____ **ZONE** ____ **STATE** _____

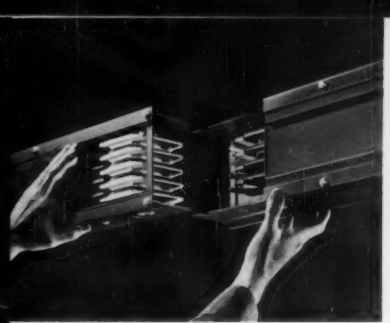
AND HERE'S
THE NEW
MATCHING **XL**

SAFETY-PLUG

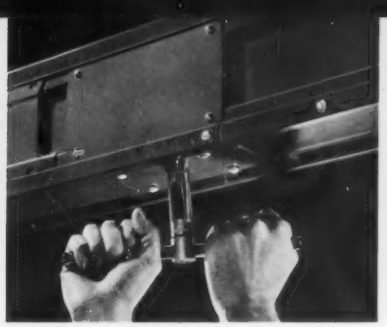
that makes
plugging in
fast and safe!



The new XL SAFETY-PLUG lets you plug int
tribution Duct in seconds with complete safety!
provides safety features *not* found on any other
are available which prevent installation or remova
handle is in the "on" position. You *can* plug in
side of the duct, in all duct sizes from 225 through
You *can* use all plug-in openings at the same time



1. FAST INSTALLATION. Keyed bus ends align themselves positively, instantly, without fumbling or wasted time. You can position sections as fast as you can handle them!



2. EASY INSTALLATION. This one integral bolt locks POSITIVELY . . . holds keyed bus ends under a ton of pressure. The fully insulated bolt spins tight fast. Joints stay locked!

3. ECONOMICAL INSTALLATION. You need only half as many hangers as usual. Ten-foot supporting spans cut number of hangers and the time needed to install them by 50%.

HERE'S WHY XL BUStribution Duct is best for you

4. DEAD-FRONT SAFETY. Each bus bar has full-length Butyl insulation, even in bus plug openings. XL BUStribution Duct is the world's safest duct to plug into, to work around.

5. PERSONNEL SAFETY. Safety door covers the opening . . . slides back when safety interlock finger is in position. Plug cannot be removed or installed when safety door is open.

6. EQUIPMENT SAFETY. SAFETY PLUGS cannot be installed or removed when in the "on" position . . . exclusive design positively protects against arcing, safeguards equipment.

g into XL BUS-
fety! New design
other plug. Plugs
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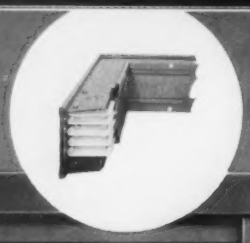
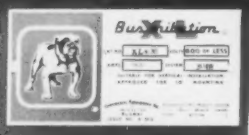
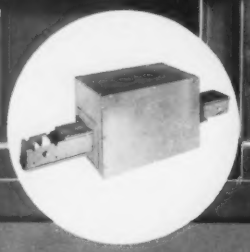
ough 1000 amps.
time if desired.



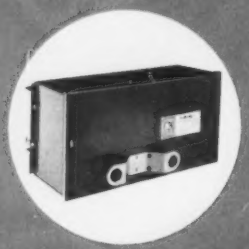




BULLDOG

gives you one source for fully-engineered components.

BullDog provides a complete line of fully-engineered components for use with new XL BUStribution Duct and Safety-Plug. You can get everything you need from a single convenient source—your local BullDog distributor.



IMPORTANT SPECIFICATIONS

of new XL BUStribution Duct

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as low as one-half that of other plug-in duct systems.

•

50,000 RMS SHORT-CIRCUIT RATING
in all sizes above 225 amps.

•

SINGLE-BOLT BAR CONNECTION
in all sizes up to 800 amps.
(800 to 1000 amps.—2 bolt connection)

•

FULL BUTYL INSULATION

•

TEN-FOOT SUPPORTING SPANS

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COMPACT:
30% smaller, 25% lighter than other duct systems

BULLDOG ELECTRIC PRODUCTS DIVISION
I-T-E CIRCUIT BREAKER COMPANY
BOX 177 • DETROIT 32, MICHIGAN

FORM NO. XL-1

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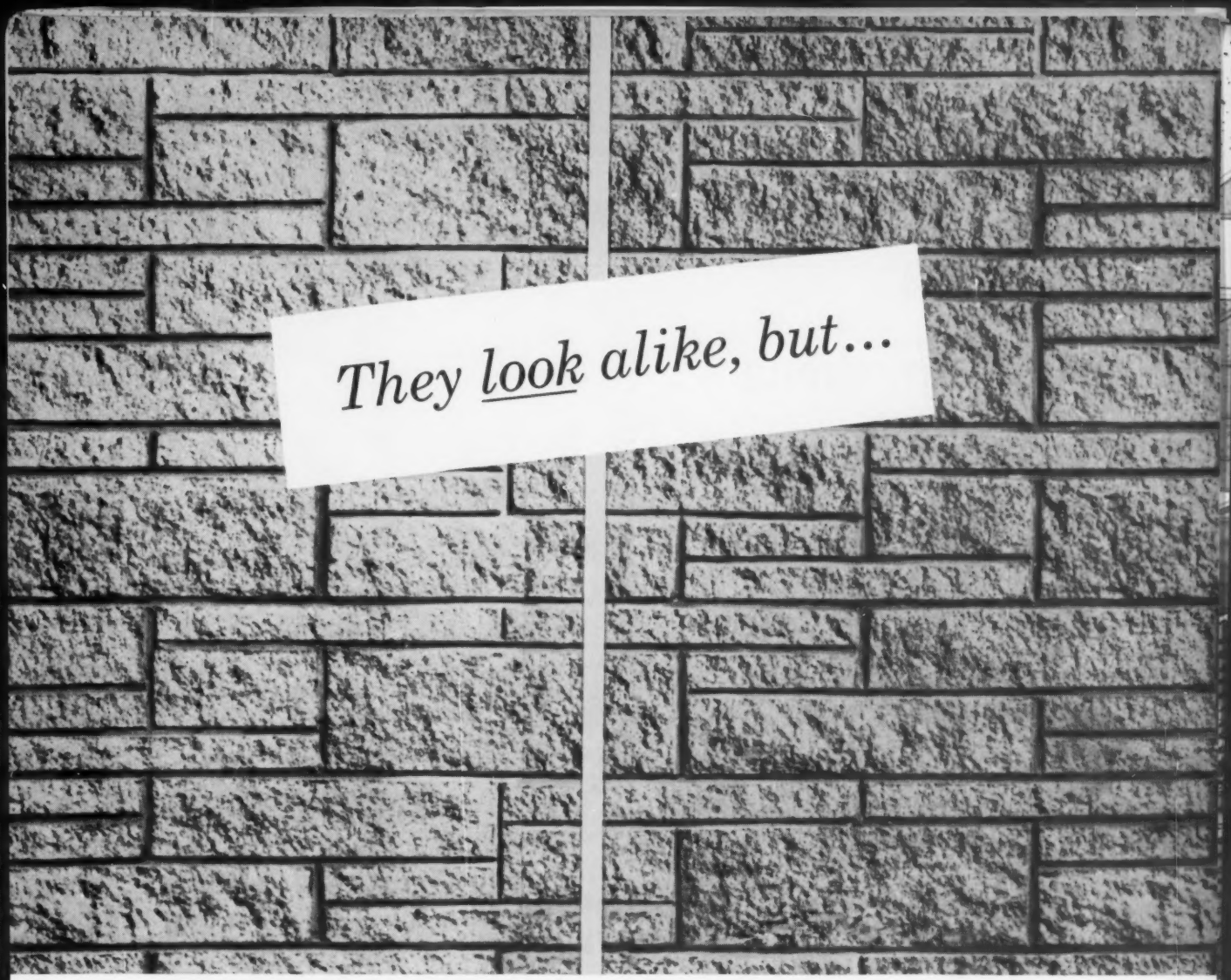


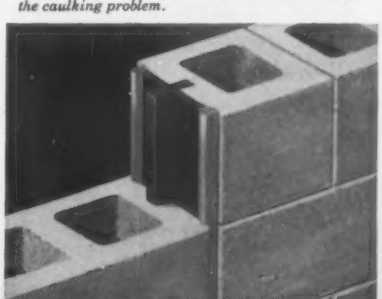
it takes Dur-o-wal to keep them alike!

Two masonry walls: They can be twins in surface charm and solidity. Yet, one can be the better building investment—free of maintenance problems for important extra years. That's the one built with Dur-o-wal, the original steel masonry wall reinforcement.

A wall reinforced every second course with Standard Weight Dur-o-wal has 71 per cent greater flexural strength than its unreinforced counterpart.

With its trussed design, butt-welded construction, scientifically deformed rods, Dur-o-wal is considered the most practical thing of its kind by builders everywhere. Nationally wanted, Dur-o-wal is nationally distributed. Wherever you build a masonry wall, you can get Dur-o-wal.

Two engineered products that meet a need. Dur-o-wal reinforcement, shown above, and Rapid Control Joints, below. Weatherproof neoprene flanges on the latter flex with the joint, simplify the caulking problem.



DUR-O-WAL®

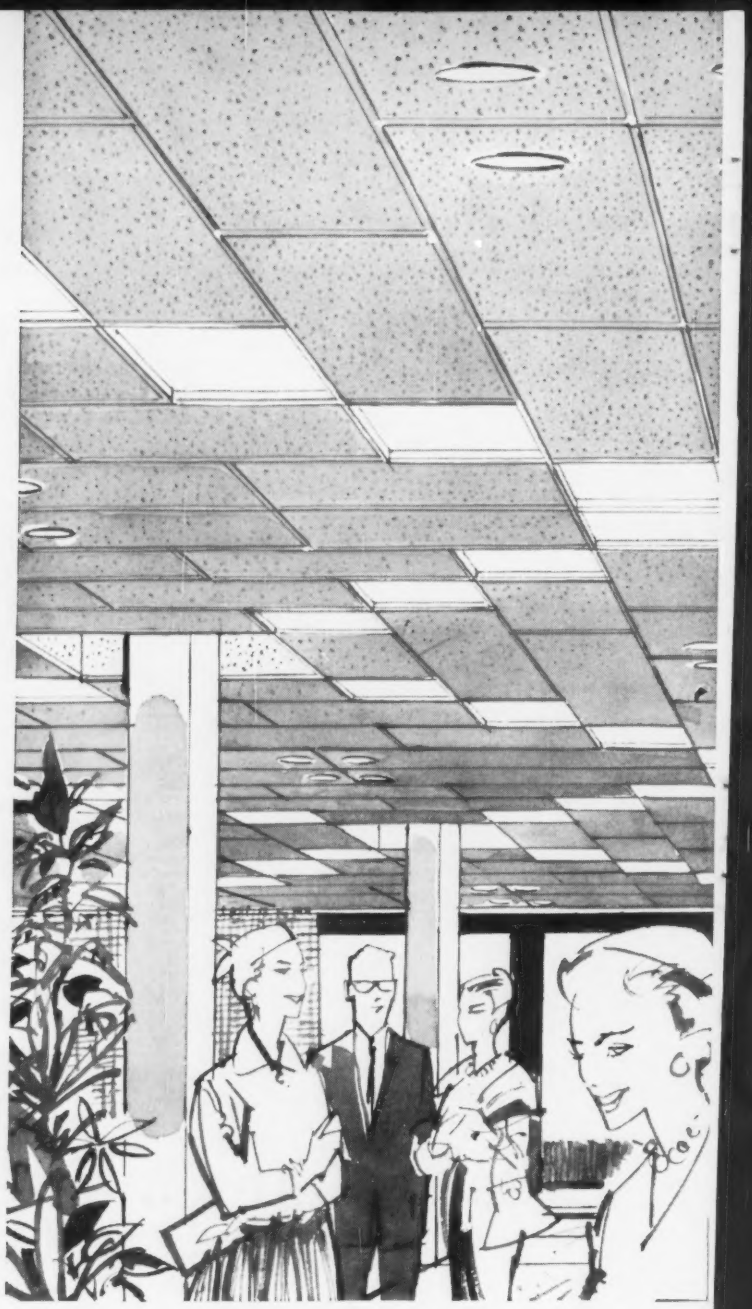
Masonry Wall Reinforcement and Rapid Control Joints

RIGID BACKBONE OF STEEL FOR EVERY MASONRY WALL

Dur-O-waL Div., Cedar Rapids Block Co., **CEDAR RAPIDS, IA.** Dur-O-waL Prod., Inc., Box 628, **SYRACUSE, N. Y.** Dur-O-waL Div., Frontier Mfg. Co., Box 49, **PHOENIX, ARIZ.** Dur-O-waL Prod., Inc., 4500 E. Lombard St., **BALTIMORE, MD.** Dur-O-waL of Ill., 119 N. River St., **AURORA, ILL.** Dur-O-waL Prod. of Ala., Inc., Box 5446, **BIRMINGHAM, ALA.** Dur-O-waL of Colorado, 29th and Court St., **PUEBLO, COLO.** Dur-O-waL Inc., 165 Utah Street, **TOLEDO, OHIO**

How Armstrong Minaboard helped us solve the problem of unifying a large enclosed space

plan by George L. Dahl
Architects & Engineers
Dallas, Texas



"A BASIC problem of a large enclosed area lies in finding a design element to give it unity.

"In our plan for a modern department store, we have used an Armstrong Minaboard ceiling as the one dramatic unifying design element.

"The recessed sky-dome treatment at each 20′ spaced column creates the illusion that the ceiling is floating free for dramatic effect.

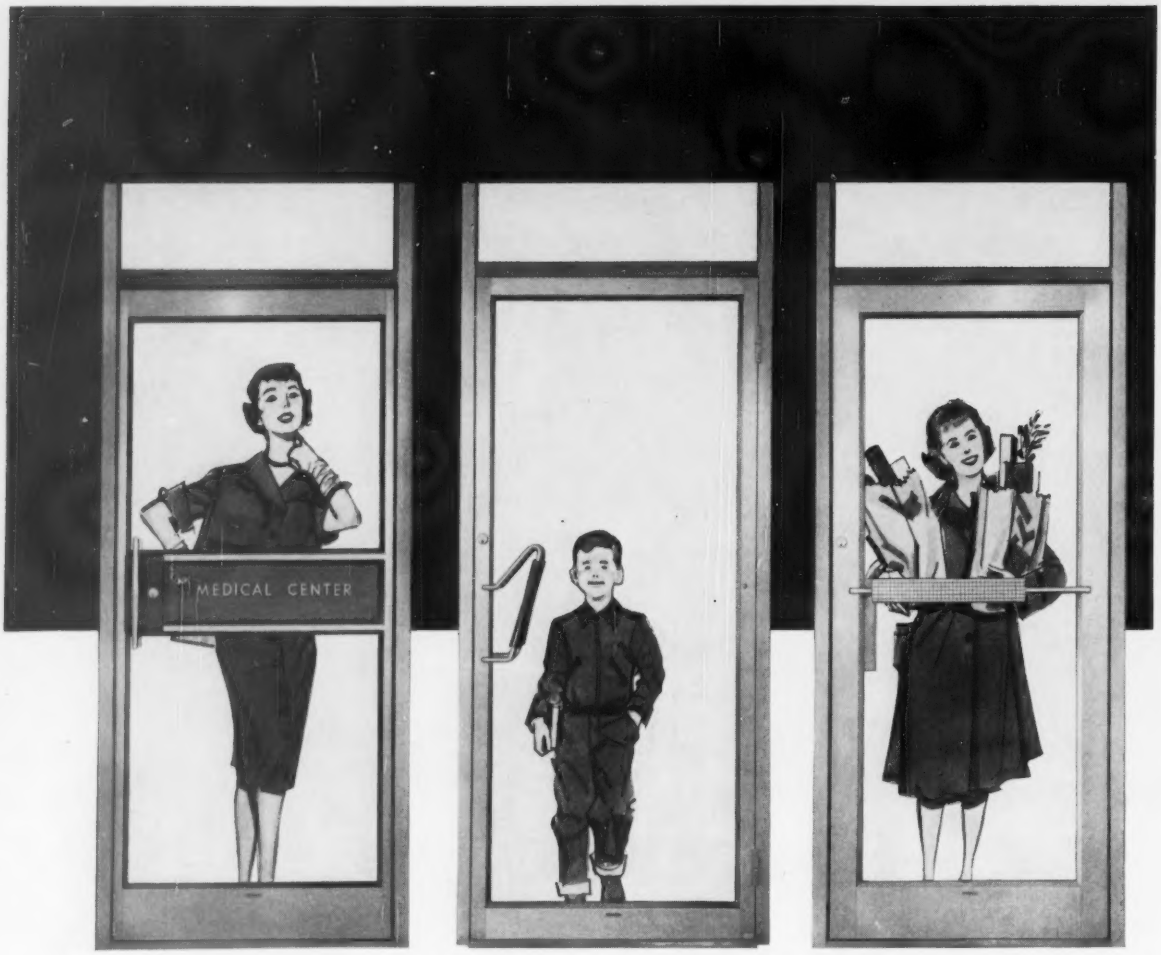
"The 2′ x 4′ Armstrong Minaboard panels and the 2′ x 2′ recessed fluorescent fixtures are combined with special incandescent accent lights which are located in the center of each bay. The alternate 2′ x 2′ recessed fluorescent fixtures are arranged in a balanced checkerboard pattern.

"The Armstrong Minaboard lay-in panels are intended to be used without special adapters or size adjustments. The ceiling will therefore be a unified design element which will complement the various sales areas within the glass wall perimeter." For further information and complete specifications, call your Armstrong Acoustical Contractor, call your nearest Armstrong District Office, or write to Armstrong Cork Co., 4202 Watson Street, Lancaster, Pennsylvania.

Armstrong Custom Minaboard is an economical, incombustible, acoustical lay-in panel designed for an exposed grid suspension system. It is available in 24″ x 24″, 24″ x 36″, and 24″ x 48″ units. Its special density and composition give it excellent resistance to sound transmission. (AMA room-to-room attenuation factors are 40.4 db for ⅝″ Minaboard.) It stays cleaner because it resists *breathing* dirt-laden air. It is available in two designs: Custom and Fissured. It offers excellent sound absorption.

Armstrong ACOUSTICAL CEILINGS

1860 — 1960 Beginning our second century of progress

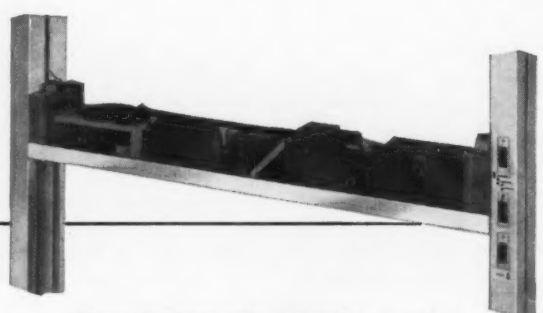


The Style Leader 125 is designed for shops where atmosphere is important, such as jewelry stores, clothing stores and specialty shops, or for banks or stores desiring a prestige appearance.

The Narrow Stile 188 is used in stores or buildings which have a normal to heavy flow of traffic.

The Extra Duty 350 is for use in stores or buildings which have an extra heavy flow of abusive traffic, such as supermarkets and schools.

Keys to the slim appearance and low installed cost of Kawneer Entrances... manual or automatic



Kawneer Automatic Operator . . . the new idea in automatic operators. Nothing buried in the floor, nothing hanging over the door. The Kawneer Automatic Operator is completely concealed in the 4½" transom bar, wired to the mat through the frame. Available with all Kawneer entrance packages.

new! KAWNEER DUTY-RATED ENTRANCE PACKAGES

The Wide Stile 500 is for buildings where traffic is both heavy and highly abusive, or where a feeling of massiveness and solidity is desirable, such as banks.

The Stainless Steel 200 has been developed for those applications in which the design and decor of the building or store makes its use preferable.

with "tuned-to-the-traffic" design

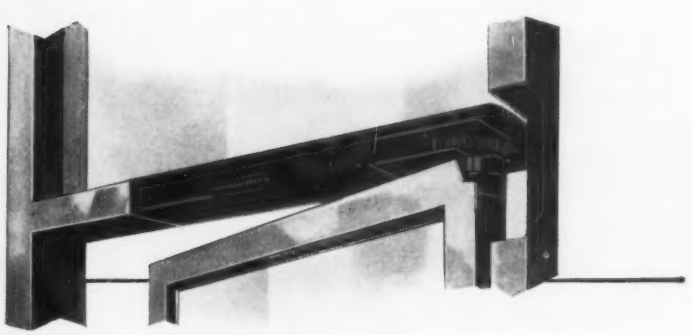
These new Kawneer entrance packages are built to meet specific entrance needs. They combine the economy of fabrication with custom design flexibility. You choose from

. . . five different doors
. . . twenty push-pull hardware combinations
. . . five (or more) closers
. . . eight frame and entrance wall glazing systems

All components arrive in one package shipment, eliminating catch-as-catch-can deliveries and scheduling problems.

For complete information, tear out this corner and hand it to your nice secretary.

(Nice secretary: write for "The Second New Idea In Entrances", Dept. PA-20, Kawneer Company, 1105 N. Front Street, Niles, Michigan.)



Kawneer Concealed Overhead Closer . . . It introduced the new sheer look in entrances—with low installed cost! No holes to dig, no cement case to set, no complex adjustments to make; this closer is completely concealed in the 1¾" transom bar. Available with all Kawneer entrance packages.

Serving Architecture and Industry
Kawneer
General Offices NILES MICHIGAN
ARCHITECTURAL PRODUCTS DIVISION
since 1906

DECORATIVE MULLION PATTERNS and sharp, clean exposed holes are formed in cantilevered floor slabs at the University of Arkansas Medical Center, Little Rock. The job was performed easily and economically with little finishing required . . . one of the many "plus" advantages of today's POZZOLITH concrete.

Exciting design ideas with POZZOLITH concrete...

Crisp, clean patterns easily formed in cantilevered concrete slabs

Architectural concrete with keen, sharp corners . . . fine, square edges. These are the distinguishing features of the cantilevered floor slabs in the University of Arkansas Medical Center. To assure architecturally and structurally superior concrete—POZZOLITH was specified and used throughout.

Architecturally—POZZOLITH concrete provides better exposed surface texture. Its flowable characteristics allow smooth execution of intricate detail with significantly little finishing. *Structurally*—POZZOLITH concrete affords exceptional strength and durability.

For your jobs, only POZZOLITH concrete can provide these architectural advantages—*greatly reduced shrinkage . . . vastly improved surface texture . . . highest possible strength.* Neither plain concrete nor concrete with any other admixture can match the results you'll get with today's POZZOLITH.

On current or future concrete projects—the local Master Builders field man will welcome discussing your requirements. Call him in. He's at your service—backed by our research and engineering staffs—unexcelled in the field of concrete technology. Write us for complete information on POZZOLITH.

The Master Builders Company, Cleveland, Ohio
Division of American-Marietta Company
The Master Builders Company, Ltd., Toronto, Ontario
Represented in foreign countries by:
Master Builders International, Nassau, Bahamas
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Branch Offices in all principal cities.

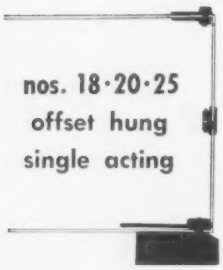
UNIVERSITY OF ARKANSAS MEDICAL CENTER is an outstanding example of the designs and textures of modern architectural concrete. Architects: Erhart, Eichenbaum & Rauch of Little Rock and Edward D. Stone, New York City • Structural Engineer: E. M. Freeman and Associates, Shreveport • Contractor: W. R. Grimshaw Co., Tulsa • POZZOLITH Ready-Mixed Concrete: Big Rock Stone and Material Co., Little Rock.

MASTER BUILDERS®
POZZOLITH*

**POZZOLITH is a registered trademark of The Master Builders Co. for its concrete admixture to reduce water and control entrainment of air and rate of hardening.*

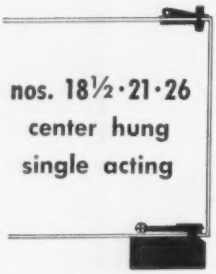
concealed floor type door closers

4 basic styles in a variety of sizes and types to meet every installation requirement



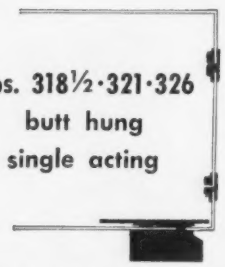
nos. 18·20·25
offset hung
single acting

Allow full unobstructed door opening space and wide door swing to 180°. Has arm locking device for vertical adjustment of door.



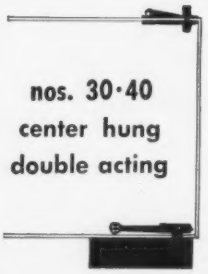
nos. 18½·21·26
center hung
single acting

Hanging hardware completely concealed. Ideal for batteries of doors. Require no mullions allowing greatest open entrance area.



nos. 318½·321·326
butt hung
single acting

For installations where it is desirable to have door hung independently from closer. RIXSON ball hinges with vertical adjustment recommended.



nos. 30·40
center hung
double acting

For doors that swing both in and out. Each swing separately adjustable to local wind and draft conditions. Completely concealed.

write for complete information and templates

THE OSCAR C. RIXSON COMPANY / ***originators of the checking floor hinge***

9100 w. belmont ave. · franklin park, ill. / CANADIAN PLANT: 43 racine road • rexdale, ontario

This elementary school in Hamilton, Massachusetts, successfully puts everything under one large roof — classrooms, offices, gymnasium and cafeteria-auditorium. The pitch of the roof places it in the vernacular of surrounding architecture and provides the extra height needed to incorporate major spaces within the single-roof concept. The size of the roof area demanded daylighting to brighten interiors with the warmth of natural light.

SCHOOL BY HUGH STUBBINS...
DAYLIGHTING BY WASCO

Wasco Self-flashing Skydomes — transparent acrylic domes sealed to base sheets of fiber-glass reinforced acrylic — were chosen because the entire pitched roof is on display. Fastened directly to the deck and flashed into the roof, their low, almost invisible silhouette solved the appearance problem beautifully. The large Skydomes were uniquely positioned to daylight both classrooms and corridor.

Wasco offers a complete line of standard Skydomes, plus many new types suitable for fresh approaches to architecture. See Sweet's Catalog 20/Wa, or write for information.

GOOD DAYLIGHTING DESIGN STARTS WITH

WASCO SKYDOMES

WASCO PRODUCTS, 5 BAY STATE RD., CAMBRIDGE 38, MASS.
IN CANADA: WASCO PRODUCTS (CANADA) LTD., TORONTO, ONT.

Lehigh Mortar Cement "... helps the masons do a good job"

Architect: Hopkins & Burton, Baltimore, Md.
Contractor: The George Hyman Construction Co., Washington, D.C.
Dealer: Hudson Supply & Equipment Co., Washington, D.C.

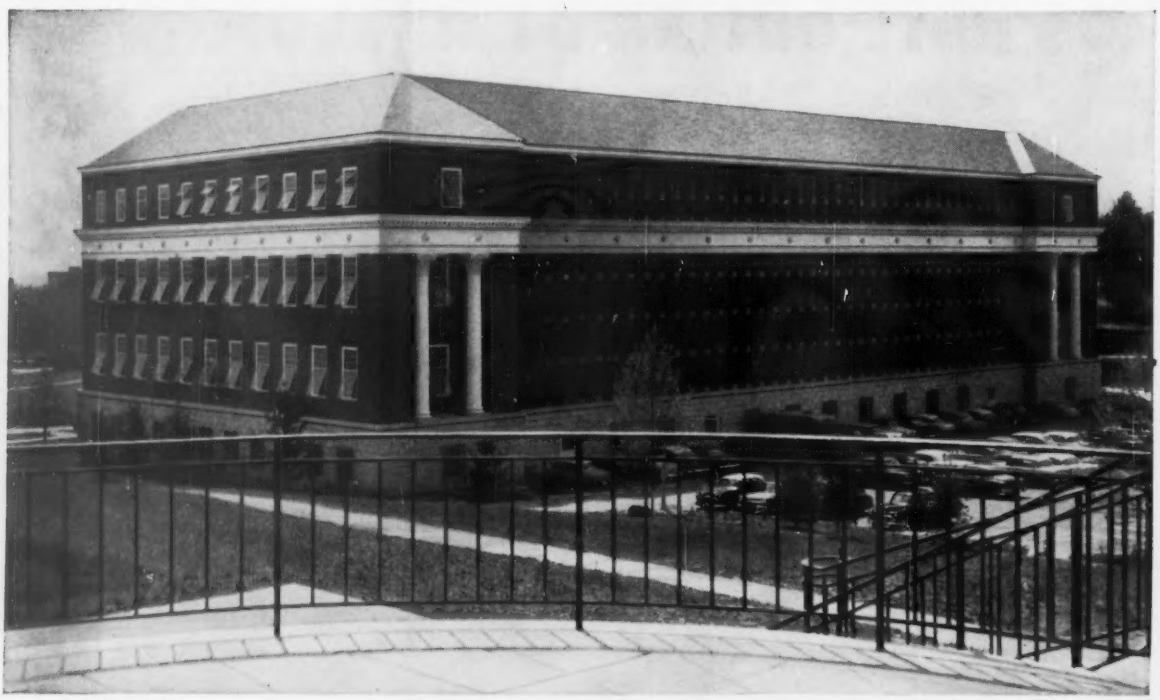
• The Theodore R. McKeldin Library is the latest of several large structures built on the University of Maryland campus by The George Hyman Construction Company. It clearly shows the results of good workmanship and good materials.

In commenting on the beautiful masonry walls of this library, Mr. J. A. Kopson, construction veteran of 50 years and superintendent on this job, had this to say about Lehigh Mortar Cement, "It has excellent strength, good color and its workability helps the masons do a good job."

This is typical of the comments made by users of Lehigh Mortar Cement the country over. So whether your next job is large or small, traditional or modern, you can approve Lehigh Mortar Cement with the assurance that it exceeds the most rigid ASTM and Federal specifications.

- LEHIGH MORTAR CEMENT
- LEHIGH AIR-ENTRAINING CEMENT
- LEHIGH EARLY STRENGTH CEMENT
- LEHIGH PORTLAND CEMENT

LEHIGH CEMENTS



Rear view of Theodore R. McKeldin Library. The building has eight stories and basement. It is approximately 118 x 243 feet.

New Aluminum Troffers for POWER-GROOVE . . .

COMFORTABLE, High Footcandle Lighting at LOWER COST than Ever Before Possible

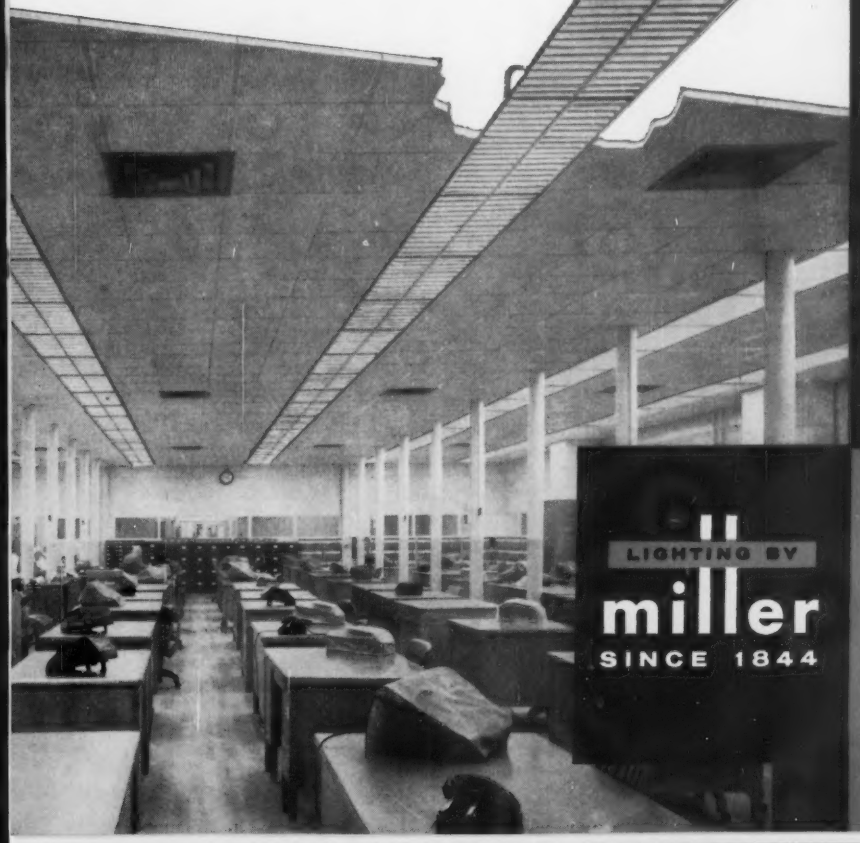
SINGLE ALUMINUM TROFFER

TWIN ALUMINUM TROFFER

Another Lighting First . . . Miller has just broken through some long standing cost barriers to COMFORTABLE, high footcandle lighting for Offices, Stores, and Public Buildings. Now, you can obtain or provide today's needed higher levels of light at *much* lower cost.

For Example . . . The lighting installation pictured is designed to maintain 120 footcandles in this 60′ x 80′ general office area. Fixtures are Miller's new Twin Aluminum Troffers—2′ x 8′ units with Power Groove Lamps. Compared with conventional, 2′ x 4′ door type recessed systems using 40w Rapid Start Lamps, and providing comparable footcandles and comfort: this new Power Groove system *requires only ¼ as many fixtures*, and *has an initial installed cost 30%-38% lower. Annual Owning and Operating cost figures 14%-18% less.* And, fewer fixtures needed means a less cluttered, more pleasing ceiling appearance. Here, 34% more ceiling area is available for acoustical treatments.

Substantial savings can be realized for both relighting and new construction . . . wherever comfortable, high footcandle lighting is desired. Let us prove to you how such savings are possible for this and other typical installations. Simply *fill out and mail the coupon.* Or, contact your Miller Representative.



LIGHTING BY **miller** SINCE 1844

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To: Dept. A-260
THE MILLER COMPANY, Meriden, Conn.

☐ I'd like additional information on how I can obtain comfortable, high footcandle lighting at lower cost with Miller Aluminum Troffers.

☐ Have Your Field Representative contact me.

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Company_____

Street_____

City_____ State_____

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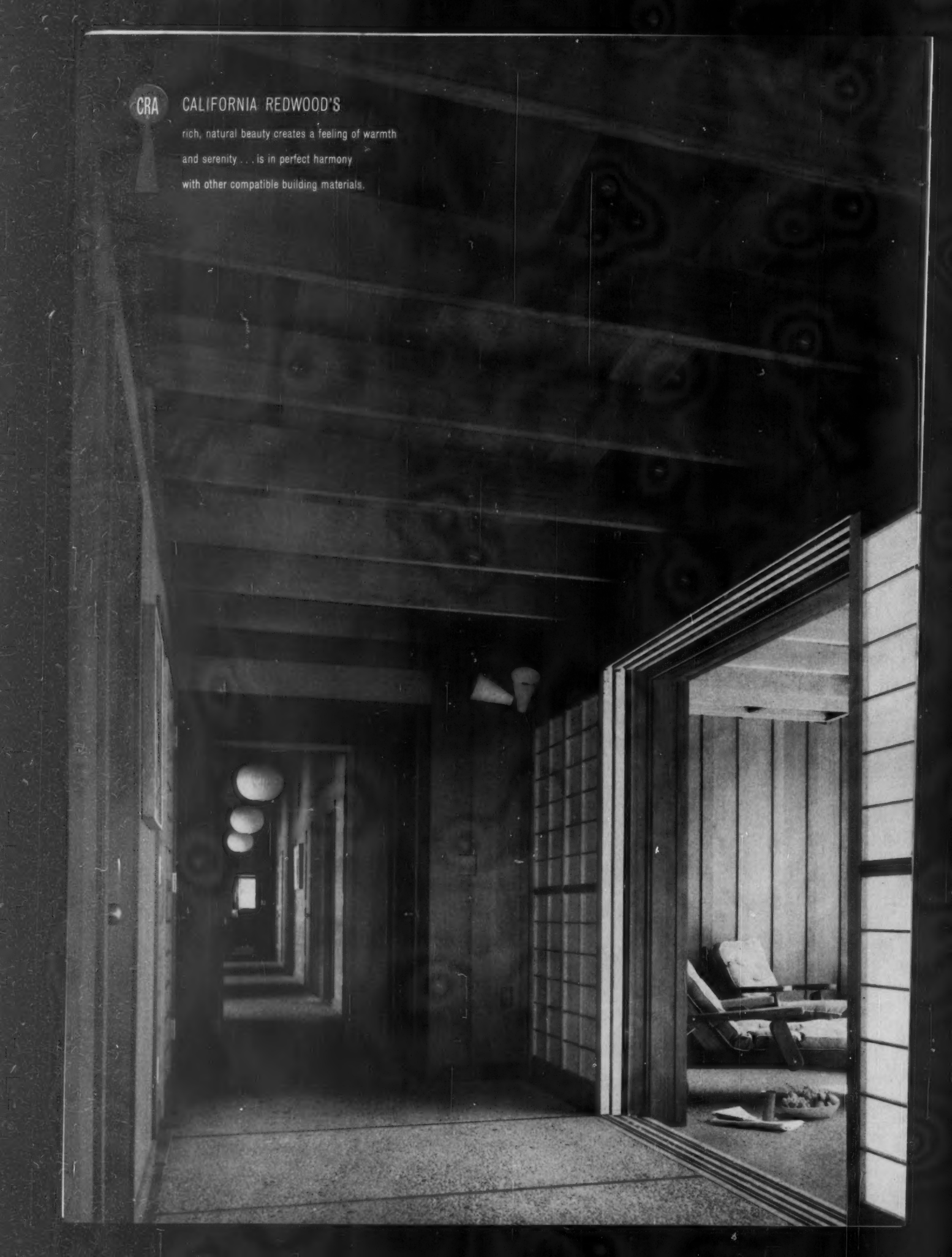
THE **miller** COMPANY
MERIDEN, CONNECTICUT

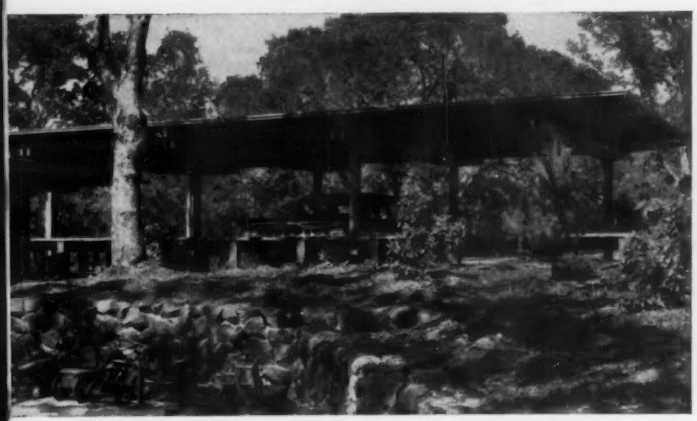

CRA
CALIFORNIA REDWOOD'S
rich, natural beauty creates a feeling of warmth
and serenity . . . is in perfect harmony
with other compatible building materials.

Architect: Edward Page, A. I. A.

The saw-textured board and batten siding, of Certified Kiln Dried redwood, is treated only with a water repellant and will weather naturally and beautifully. Redwood is one of the very few woods that defies the elements, year after year, even when left without a protective finish.

Because redwood provides a high degree of insulation, the ceiling in this handsome room also serves as sub-roofing. Note how the color variations in the boards add visual interest.

This unusual treatment of the overhang, using redwood 2 x 2's, is not only an interesting decorative element but also avoids the possibility of the roofing nails breaking through.



The redwood carport is in perfect harmony with nearby foliage and planting... helps to relate house and garden. Incidently, the use of aluminum, stainless or hot-dipped nails is recommended for all exterior applications of redwood.

CRA®

All the wonderful warmth of wood is best expressed in redwood.

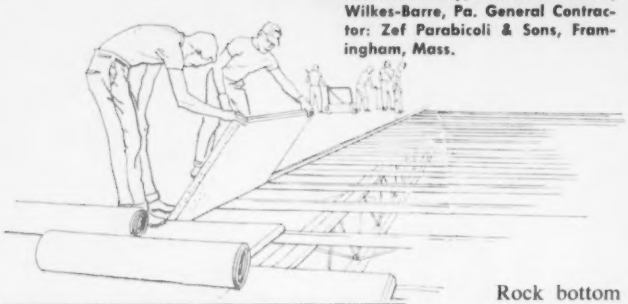
To the architect, Certified Kiln Dried redwood's natural charm, adaptability to almost every use and fascinating variety of grain patterns and color tones offer a challenge to his imagination and inspire his best work. To the owner, redwood's beauty is a continuing source of pride and satisfaction and its durability and ease of maintenance are a reflection of his good judgement.

CALIFORNIA REDWOOD ASSOCIATION • 576 SACRAMENTO STREET • SAN FRANCISCO 11 • CERTIFIED KILN DRIED REDWOOD

"HIGHER QUALITY ROOF DECK WITH 2¢ to 19¢ psf SAVINGS"

Seven men erect 39,000 sq. ft. in five days. Built-up roofing is applied as the deck is erected for maximum protection and greatest efficiency.

Architects: Lacy, Atherton & Davis, Wilkes-Barre, Pa. General Contractor: Zef Parabicoli & Sons, Framingham, Mass.



High speed clips lock in sub purlin slot and fit tightly over tongue of Tectum plank. Fast erection methods cut costs, save time.

TECTUM ROOF PLANK DESIGN DATA FOR BOX SECTION SUB-PURLINS

Three Span Load Table

Total Loads P.S.F.	Spacing O.C.	Spans 16 Ga.	Spans 18 Ga.	Spans 20 Ga.
30	32″	9′-9	8′-7	7′-1
	36″	9′-2	8′-2	6′-8
	42″	8′-6	7′-7	6′-2
	48″	7′-11	7′-0	5′-9
35	32″	9′-0	8′-0	6′-6
	36″	8′-6	7′-7	6′-2
	42″	7′-10	6′-11	5′-8
	48″	7′-4	6′-6	5′-4
40	32″	8′-5	7′-6	6′-1
	36″	7′-8	6′-10	5′-7
	42″	7′-4	6′-6	5′-4
	48″	6′-10	6′-1	4′-11
45	32″	7′-11	7′-0	5′-9
	36″	7′-6	6′-8	5′-5
	42″	6′-11	6′-2	5′-0
	48″	6′-6	5′-9	4′-8
50	32″	7′-7	6′-8	5′-6
	36″	7′-1	6′-4	5′-1
	42″	6′-7	5′-10	4′-10
	48″	6′-2	5′-6	4′-6
55	32″	7′-2	6′-4	5′-2
	36″	6′-9	6′-0	4′-11
	42″	6′-3	5′-7	4′-6
	48″	5′-10	5′-2	4′-2

Rock bottom construction costs using high quality Tectum® roof deck materials was reported by R. E. Robertson of New England Cooperatives, Inc., Framingham, Mass. Bids were received for steel, gypsum and Tectum roof decks and the Tectum specification offered greater benefits at costs ranging from 2¢ to 19¢ psf less. One bid included an unpainted formboard for the interior ceiling surface, and another $2,000 in painting costs was saved using Tectum.

Tectum form plank was used for the second floor office area slab, leaving the Tectum in-place after the concrete cured as an attractive acoustical ceiling for the first floor area.

Tectum roof deck planks are insulative, acoustical, structural and relatively light weight. Tectum normally does not require painting, is termite and rot resistant, has an attractive textured surface with a natural off-white coloring. Economical spans lessen the weight factor of supporting steel. Box section sub-purlins provide continuous beam strength, are welded in place over supporting joists.

Send today for complete information on this new, high quality roof deck system. Ask for Tectum Box Section Roof Deck Assembly Catalog and the Tectum Form Plank Catalog.

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TECTUM CORPORATION
General Offices
535 East Broad Street, Columbus 15, Ohio

Tectum

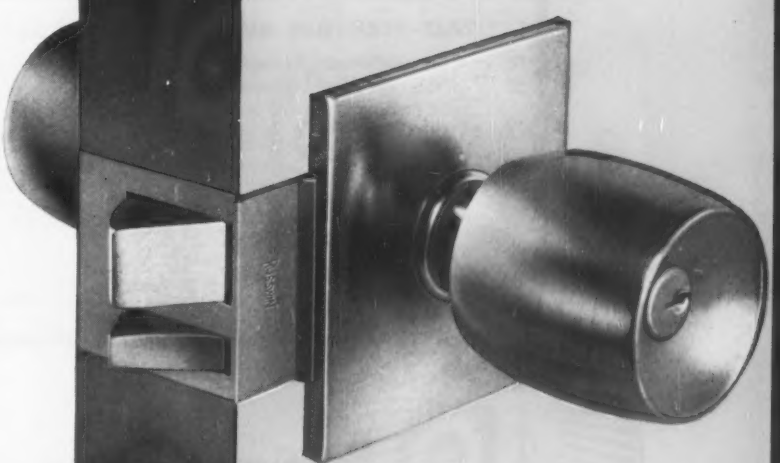
9-50

America builds for the Future...

with RUSSWIN DOORWARE

Builder and Owner: First Federal Savings and Loan Association of Hollywood, C. E. Toberman, President
Architects and Engineers: Austin, Field & Fry, Los Angeles
Contractor: The William Simpson Construction Company, Los Angeles
Hardware Supplier: Montgomery Hardware Company, Los Angeles

In the new Hollywood home of the First Federal Savings and Loan Association, beautifully styled Russwin Unilocs with Turbo design knobs complement handsomely modern architecture. The Uniloc, precision engineered for lasting dependability and smooth performance, is completely factory preassembled. It installs intact into a simple, saw-cut notch in the door. The heavy-duty components of this unique lockset remain in undisturbed, virtually wear-free alignment. A wide choice of Uniloc designs, finishes, and functions are available for any type of architecture, any lockset requirements. For full information, write Russell & Erwin Division, The American Hardware Corporation, New Britain, Connecticut.



For any door . . . in any building

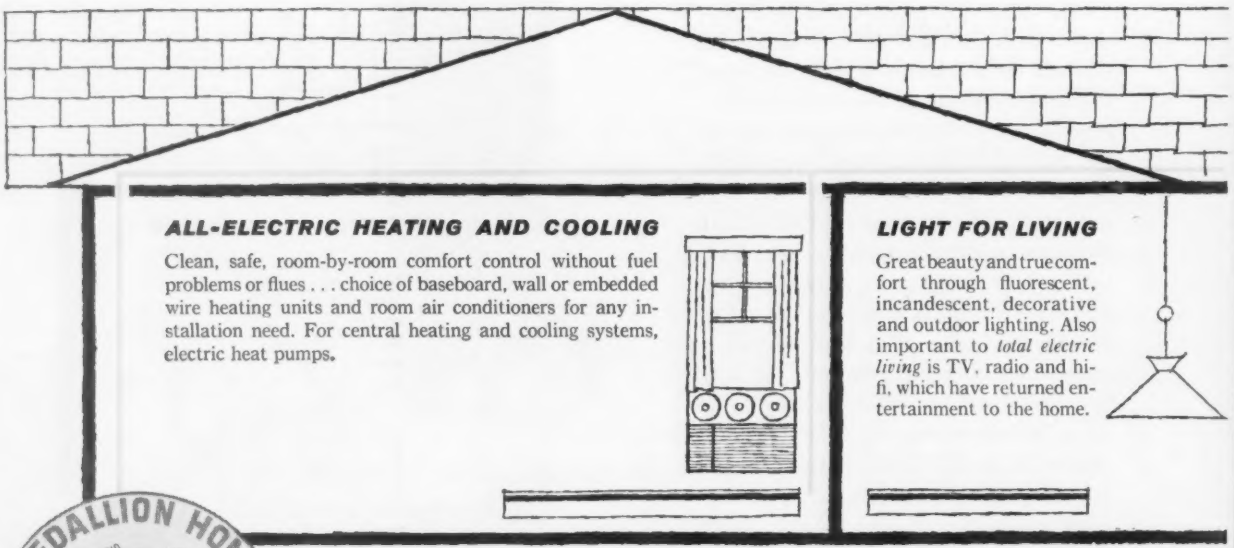
RUSSWIN

DISTINCTIVE DOORWARE

Russwin 466 Exit Bolts, as well as Russwin door closers and miscellaneous hardware, are also used in the new First Federal Savings and Loan Association building.

TO HELP YOU DESIGN TOMORROW'S LIVING INTO TODAY'S HOMES

General Electric Helps You Plan Complete Electric Heating and Cooling Systems for Medallion Homes



ALL-ELECTRIC HEATING AND COOLING

Clean, safe, room-by-room comfort control without fuel problems or flues . . . choice of baseboard, wall or embedded wire heating units and room air conditioners for any installation need. For central heating and cooling systems, electric heat pumps.

LIGHT FOR LIVING

Great beauty and true comfort through fluorescent, incandescent, decorative and outdoor lighting. Also important to *total electric living* is TV, radio and hi-fi, which have returned entertainment to the home.

MEDALLION HOME ® REG. PEND LIVE BETTER ELECTRICALLY

GOLD MEDALLION HOMES

Equipped by General Electric

A generation ago, an architect's main concern with electricity was to plan a lighting system into the home.

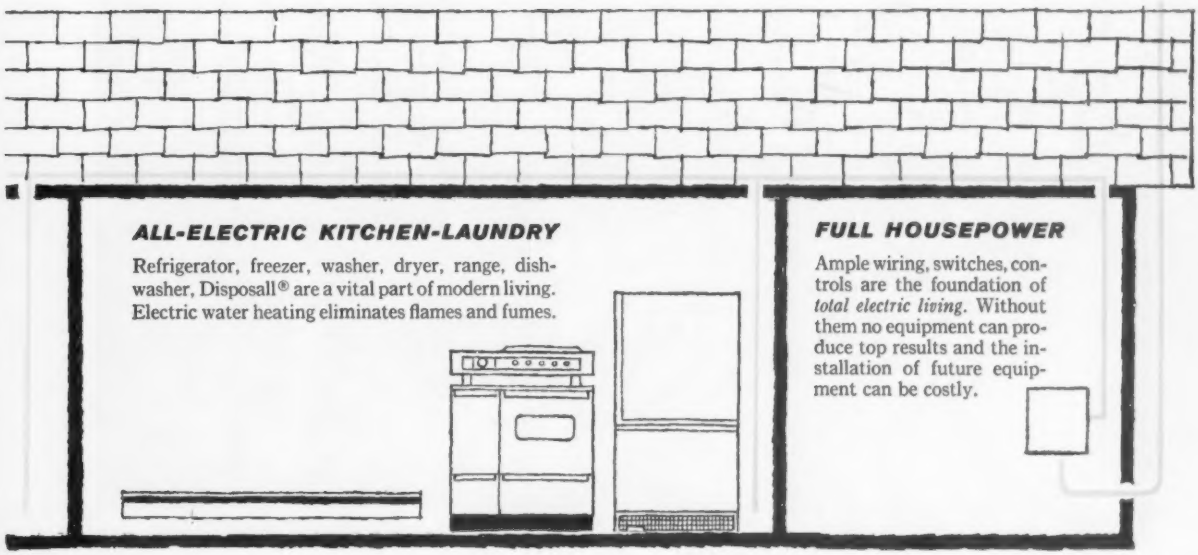
Today, public interest in *total electric living* requires that you have far more product and application knowledge. To help you in this area, General Electric has organized all divisions of the company to support the Medallion Home Program. A national advertising campaign will increase consumer demand. A local program will help you in planning modern home electrical systems.

Most important to you, General Electric has joined with your local utility to prepare a complete Electric Heating Institute, including training films and instruction manuals for all types of electric heat installations. Your utility has probably scheduled this program. Ask them for time and place.

P.S. See the General Electric Exhibit at the National Electric House Heating Exposition, Hotel Sherman, Chicago, March 21-23.

Residential Market Development Operation, General Electric Company, Appliance Park, Louisville 1, Kentucky.

NATIONAL ELECTRICAL WEEK
FEB. 7-13, 1960


ALL-ELECTRIC KITCHEN-LAUNDRY
Refrigerator, freezer, washer, dryer, range, dishwasher, Disposall® are a vital part of modern living. Electric water heating eliminates flames and fumes.
FULL HOUSEPOWER
Ample wiring, switches, controls are the foundation of *total electric living*. Without them no equipment can produce top results and the installation of future equipment can be costly.

Progress Is Our Most Important Product

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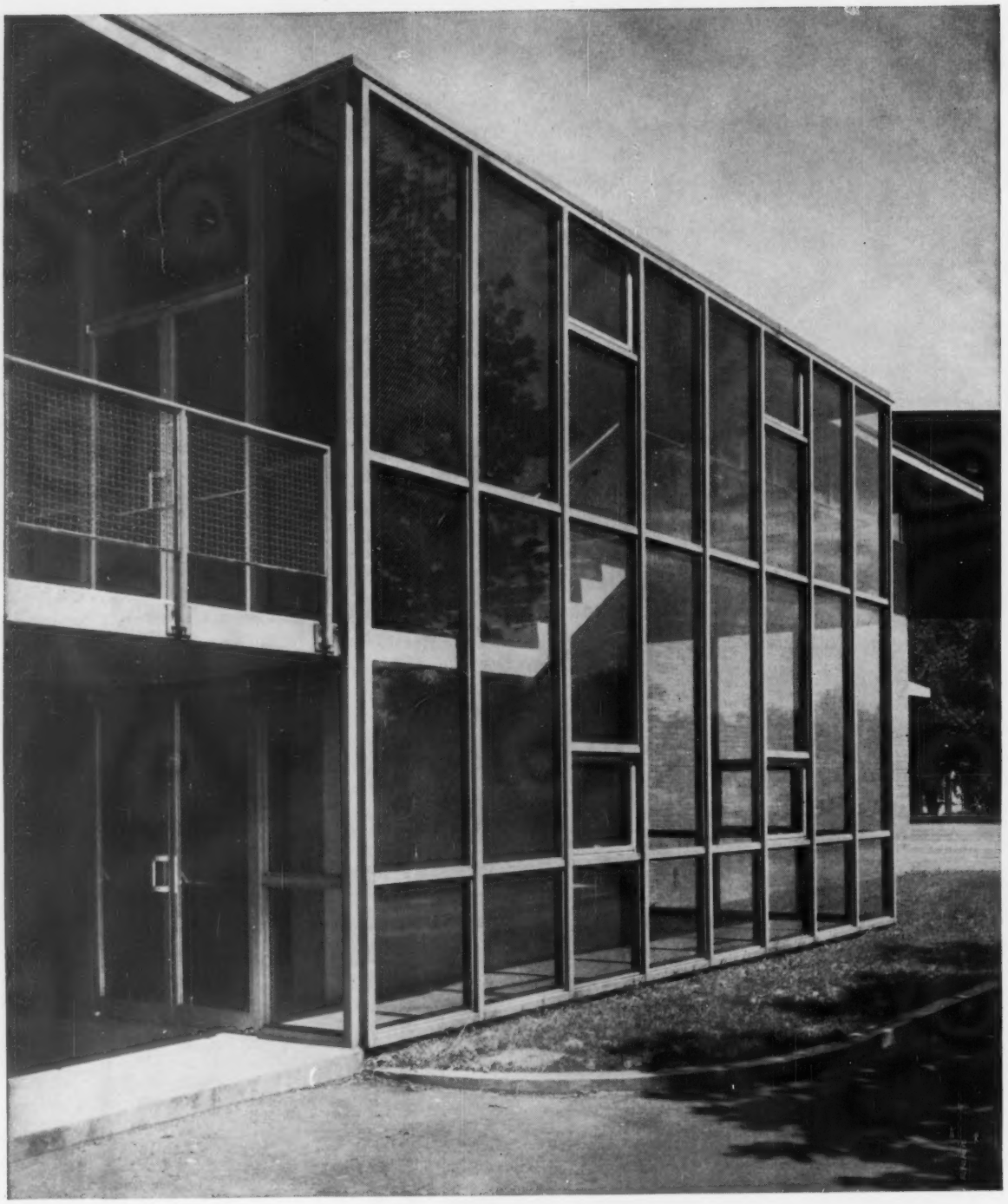


Stairwell of Polished Misco Wire Glass contributes to overall appearance as well as safety in the Fort Saunders Elementary School, Knoxville, Tenn.
Architect—Painter, Weeks & McCarty, Knoxville, Tenn.

For details, see your nearby distributor of quality glass or write for latest catalog. Address Department 8.

SEE OUR CATALOG IN SWEET'S OR WRITE FOR COPY

MISSISSIPPI GLASS CO.

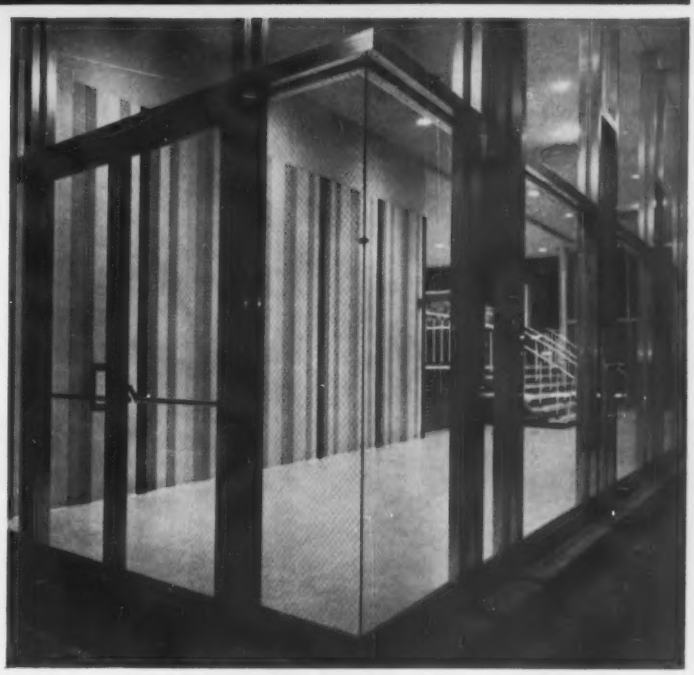
WORLD'S LARGEST

Impact and fire resistance are twin features of this Polished Misco Wire Glass installation in Tennessee School for the Deaf, Knoxville, Tenn. *Architect*—Painter, Weeks & McCarty, Knoxville, Tenn.

MISSISSIPPI GLASS...

LEADS THE WAY IN *Daylighting* WITH SAFETY

Combining beauty, utility, and economy, Mississippi leads the way by making available an extensive selection of translucent glass patterns that do wonderful things with daylight. In addition, rugged Mississippi Wire Glass, whether for obscurity or clear vision, affords effective but inconspicuous fire protection while enhancing the appearance of any structure . . . when installed in partitions, skylights, stairwells, windows, doors, or wherever else fire and breakage protection is required. The versatility of Mississippi glass provides architects and engineers with a practical solution to virtually every daylighting problem, including safety with decoration, with heat absorption and with light diffusion and direction.



Polished Misco Wire Glass glazed in main entrance of Hellertown High School, Hellertown, Pa. *Architect*—Heyl, Bond & Miller, Allentown, Pa. *Contractor*—Gottlieb-Schneider, Bethlehem, Pa. *Glazing Contractor*—Penn Allen Glass Company, Allentown, Pa.

MISSISSIPPI GLASS COMPANY

NEW YORK • CHICAGO • FULLERTON, CALIFORNIA

88 Angelica Street • St. Louis 7, Missouri

MANUFACTURER OF ROLLED, FIGURED AND WIRED GLASS

Smoke barriers, specified from the **Aetnapak**® catalog of stock components, enabled Troup Junior High School and 18 other New Haven, Conn. schools to quickly comply with fire code regulations. For the

AETNA

Aetna Steel Products Corporation, 730 Fifth Avenue, New York 19.

CONTRACTOR: R. A. CIVITELLO COMPANY • ARCHITECT: LESTER J. A. JULIANELLE

70-foot-long smoke screen-stairwell enclosure shown above, **Aetna** Steel delivered frame sections, doors and hardware within a week. No special engineering drawings or custom production were required.

AETNAPAK®

Write for complete **Aetnapak®** catalog:

AETNA STEEL
PRODUCTS
CORPORATION
730 Fifth Avenue,
New York 19, N. Y.

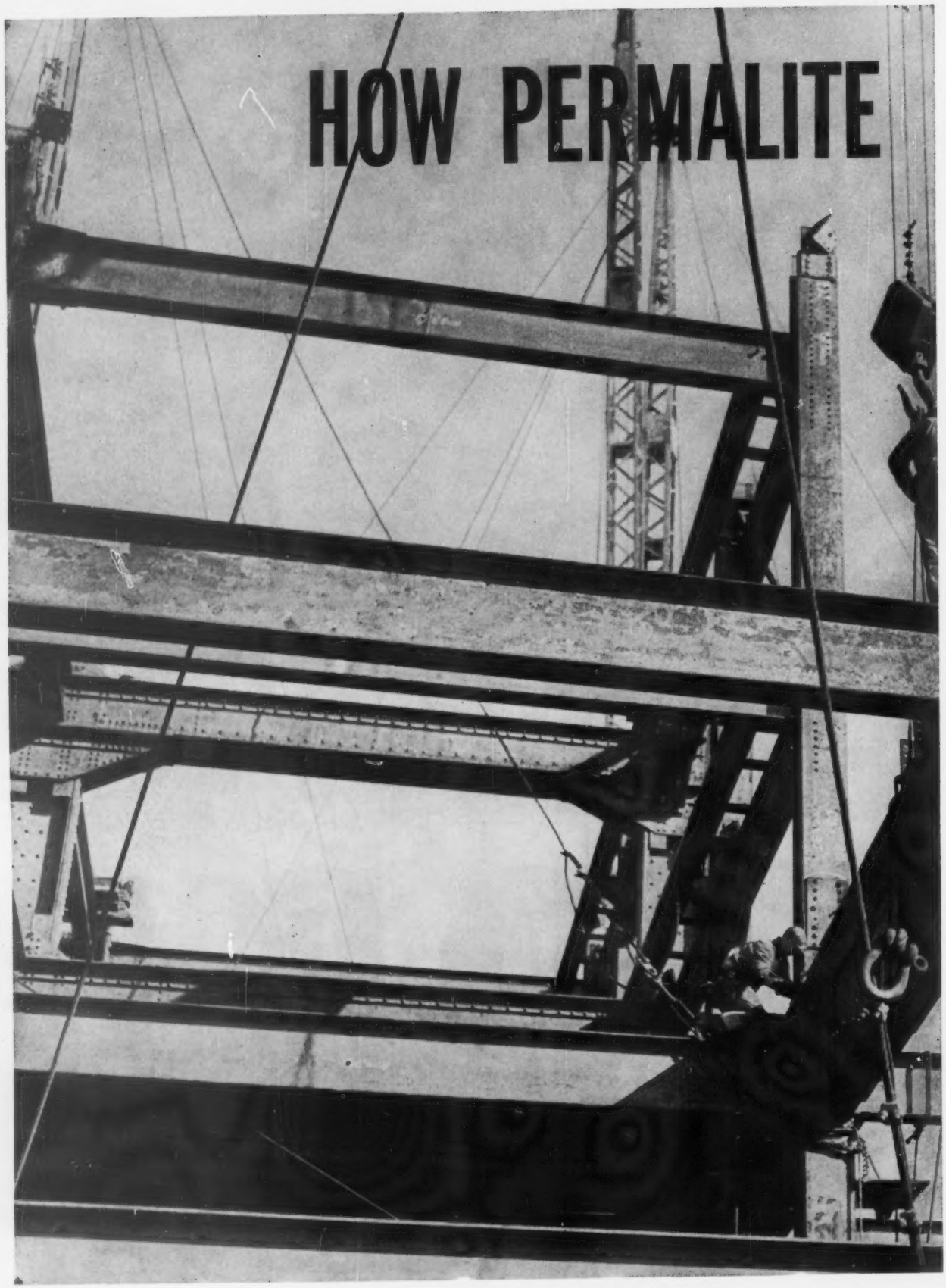
Please send free catalog of AETNAPAK custom-quality, in-stock steel doors, frames and hardware.

Name and Title_____

Company Name_____

Address_____

City_____ State_____


HOW PERMALITE

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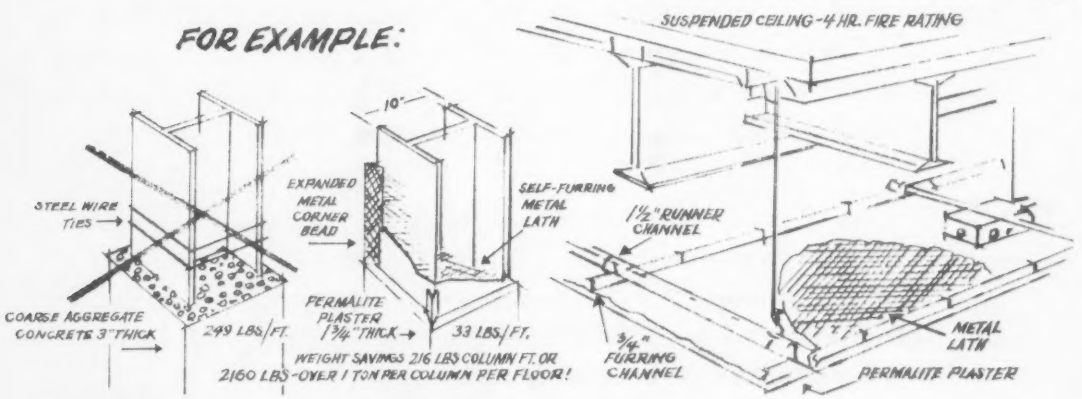
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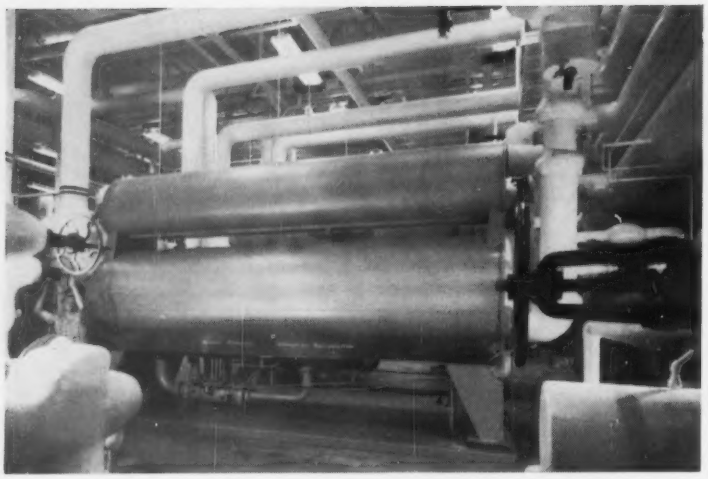

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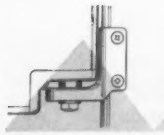
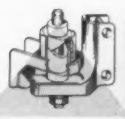
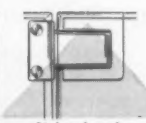


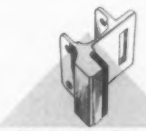
Nylon cam gravity bottom hinge



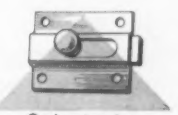
Exposed view of bottom hinge construction



Nylon bearing top hinge



Combination keeper and bumper



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REINHOLD

circling at 38° 30′

Dear Editor: We have just completed a tour around the world. We tried to follow the latitude of St. Louis, to see what the people did to solve the problem of climate.

Japan, Viet Nam, Hong Kong, Singapore, Burma, Bangkok, India, Iran, Turkey, Greece, Italy, France—all had houses that would provide economical comfort, but the wide use of travel had made the *new* structures become "Western." A pity!

I remember your comments about regionalism and agree with you that it is dead.

The best architecture is the house in Japan—fine detailing and workmanship. The best pure design—ancient sculpture in the museum on the Acropolis. The most fun—the thinness of Paris fronts. The most decorative—the temples of Bangkok. The most disappointing—the crudeness of "modern" architecture.

ROBERT ELKINGTON
St. Louis, Mo.

extremely important

Dear Editor: I hope it is not too late to tell you how much I enjoyed your articles on the "New Sensualism." I think they are extremely important and stimulating contributions to the criticism of contemporary architectural developments, and I know that they have been widely discussed. I hope you will publish more of your thought on the same topic.

JOHN B. JACKSON
Santa Fe, New M.

design from abroad

Dear Editor: Congratulations on your December choice to publish material on the Church of Baranzate of the Italian architects Mangiarotti and Morassuti.

The striking simplicity of the church demonstrates that by using the advanced structural elements of today's construction, namely prestressed concrete and the curtain wall, the sensitive designers can achieve a reigning atmosphere of spiritual content.

I would appreciate immensely, with the other readers I am sure, seeing in every future issue of PROGRESSIVE ARCHITECTURE a sample of some interesting design from elsewhere abroad. Thank you for your first-rate publication on what is indeed progressive architecture.

ADAM MILCZYNSKI KAAS
New Haven, Connecticut

meaning of luxury

Dear Editor: The article on Wilshire Terrace (DECEMBER 1959 P/A) clearly describes a true, luxury, apartment dwelling. It is unfortunate that there are not more like this; rather we seem to be directed toward many buildings of dull, unimaginative design. As a resident of Manhattan, where there are luxury buildings going up everywhere, I see the fallacy in the term "luxury." One has just to walk up Third Avenue and see what is called luxury. These buildings are nothing more than planned boxes of space to restrict, and also to provide shelter for the high-rent-paying inhabitants. The Avenue's newest building, Imperial House, tries to come close to giving true luxury features, but it misses in its exterior design. From the outside it is a box-like structure of brick and window with flat protruding slabs called balconies. These are the names given to small dirt catchers.

Two other "luxury" co-operative buildings are provided with gimmicks to designate luxury. The first is a pair of buildings called Cannon Point North and South, nothing more than tenements built right on the East River. Magnificent views of neighbors' apartments are pro-

(Continued on page 56)

Mahon METAL CURTAIN WALLS

Maintenance Hangar for American Airlines located on the Detroit Metropolitan Airport. Mahon Metal Curtain Walls in blue porcelain finish were employed, in this instance, with natural brick to produce an attractive exterior. Wall Plates of the same material painted gray were employed to face the large hangar doors.

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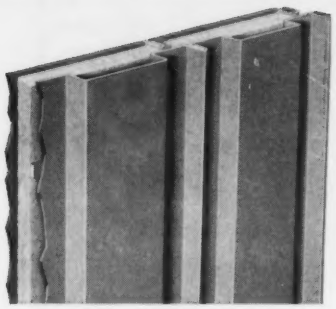

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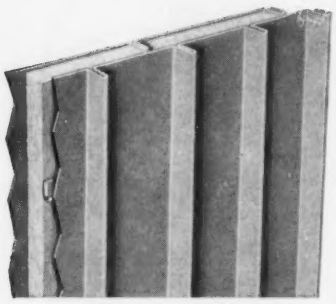

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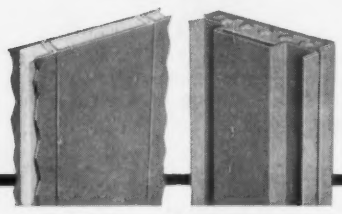

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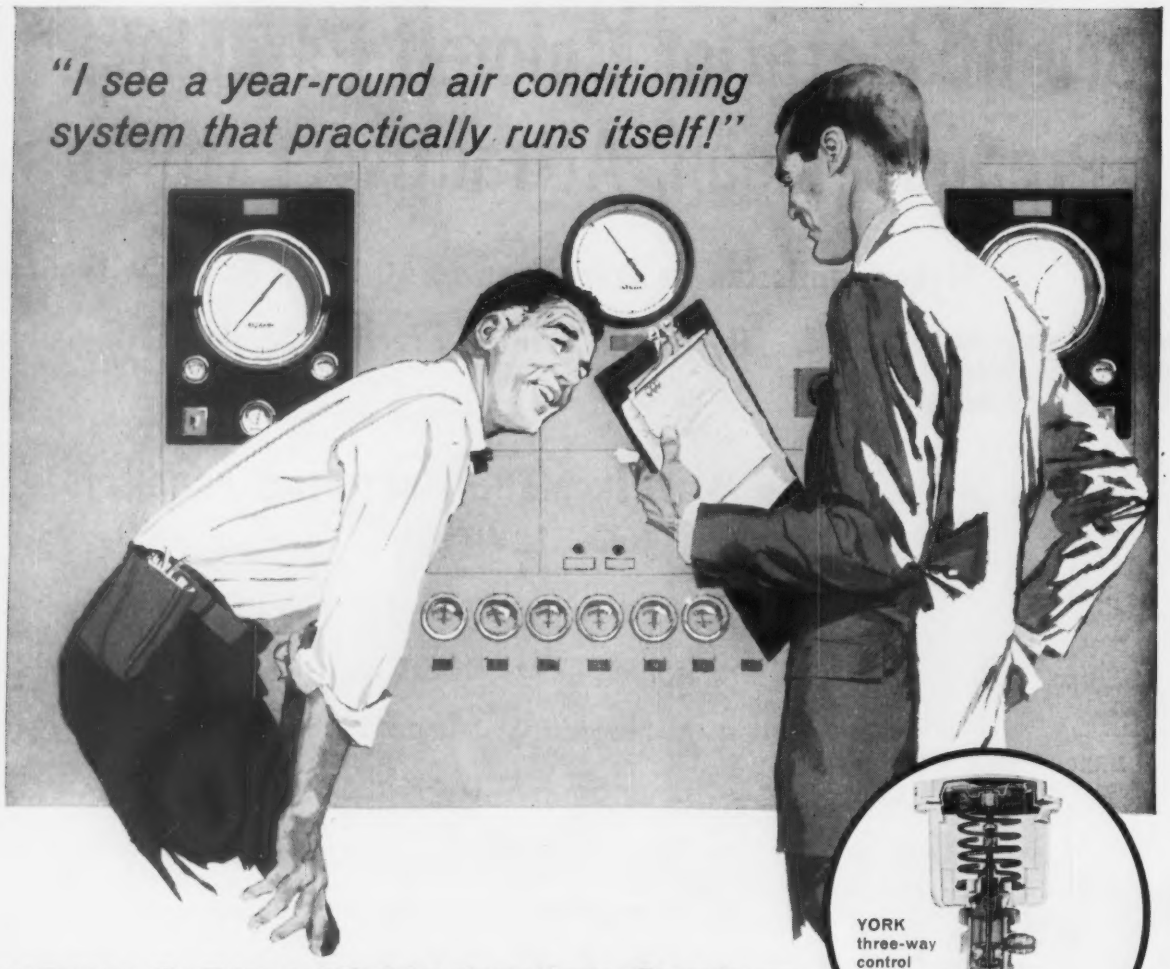

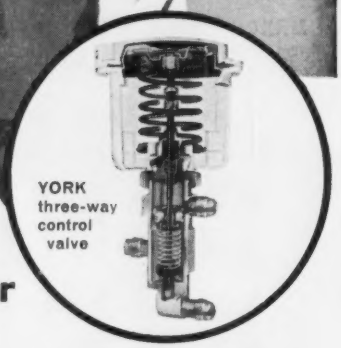

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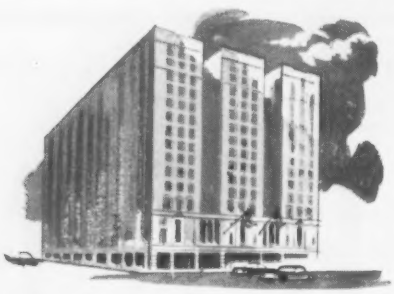

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AL

(Continued from page 51)

vided; there are a lucky few with a clear outlook to the river. The second has been named Gracie Towers and its luxury feature is a swimming pool on the roof. Aside from this innovation it closely resembles Imperial House.

It is unfortunate that there have been no steps taken to remedy these usual situations. Our city is on display constantly—but there is little to see in the way of modern, luxury apartment houses. I believe there are many persons willing to pay more for the privilege of living in a dwelling such as Wilshire Terrace.

JEFFREY WEISBORD
Lafayette College
Easton, Pa.

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distaff prescription: "sizzle"

Dear Editor: When your November issue came, I read the P.S. article on page 254 called "Why Not More Good Average Work?" It interested me very much.

There can be only *one* answer to why clients will not accept good design: that answer, in one simple word, is *selling*. Architects, from what I can observe, are the poorest salesmen on earth and they should be first of all top-ranking salesmen thoroughly trained in selling. A person can have the most wonderful idea ever, but unless he *sells* the idea, it does not amount to a hill of beans.

I was amazed to learn that in an architect's training no stress is put on selling or human relations. Frankly, I do not know of any group of people in a profession that needs it more. From very close observation, I find them to be rather scholarly and reserved. In order to sell they need far more enthusiasm, friendliness, and zip.

My suggestion would be that in the convention program selling be made a very important part. Every AIA member should be required to take a Dale Carnegie Course! At the meetings when the AIAs get together, they should be taught the fundamentals of this most important subject: because, whether you have an improvement in architecture or not is going to depend on just that. In your second paragraph, where you say, "they include some talented people with enough force to carry through their concepts;" that force is just the most important one, SELLING.

Why, in this group here they won't even wear the AIA pins, which to me is just terrible. They don't have the slightest concept as to what impresses the general public. And today you have to have both feet on the ground and put the "sizzle" to work in every direction. Many a time when I am around the architects, they give me the impression that their bodies are here, but their minds have moved to another plane. Dreamers!

This has been my thought for some time and I decided to express it. My husband is an architect and if he knew I

(Continued on page 62)

HOTEL HABANA HILTON
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Welton Becket & Associates
—Architects

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—Mural Artist

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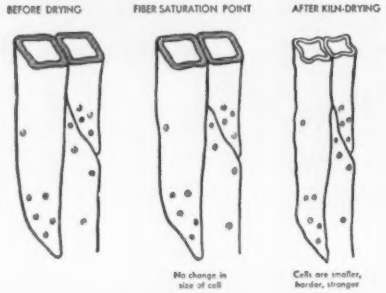
**Note: Moisture content is the weight of water contained in wood expressed as a percentage of the weight of the oven-dry wood. Weyerhaeuser 4-Square kiln-dried framing lumber is dried to an average moisture content of 19%, well below the 25% fiber saturation point. Finish lumber is kiln-dried to an average of 12%.*

The illustration below shows how wood cells change as water is removed.



Kiln-drying not only reduces the natural moisture content of lumber: it also makes lumber less absorbent, less subject to changes in humidity. And as the "patterning" of the cells and fibers becomes more stable, lumber will grip and hold nails better. Pound for pound kiln-dried lumber is one of the strongest materials available to the builder!

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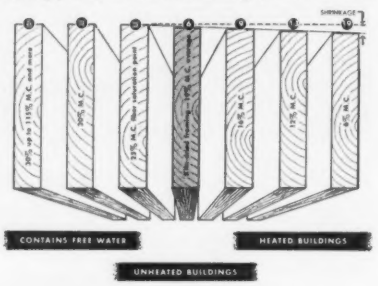
The following chart shows the relation of shrinkage to the moisture content of wood. Several facts should be noted. (1) Shrinkage starts only after free water is gone—at about 25% moisture content. (2) The Western softwoods shrink in width and depth, not in length. (3) Moisture content of lumber in use is governed by temperature and relative humidity. This varies according to locality, use within buildings, and so on.



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6. Trademarked and grade stamped to assure your receiving exactly what you ordered.

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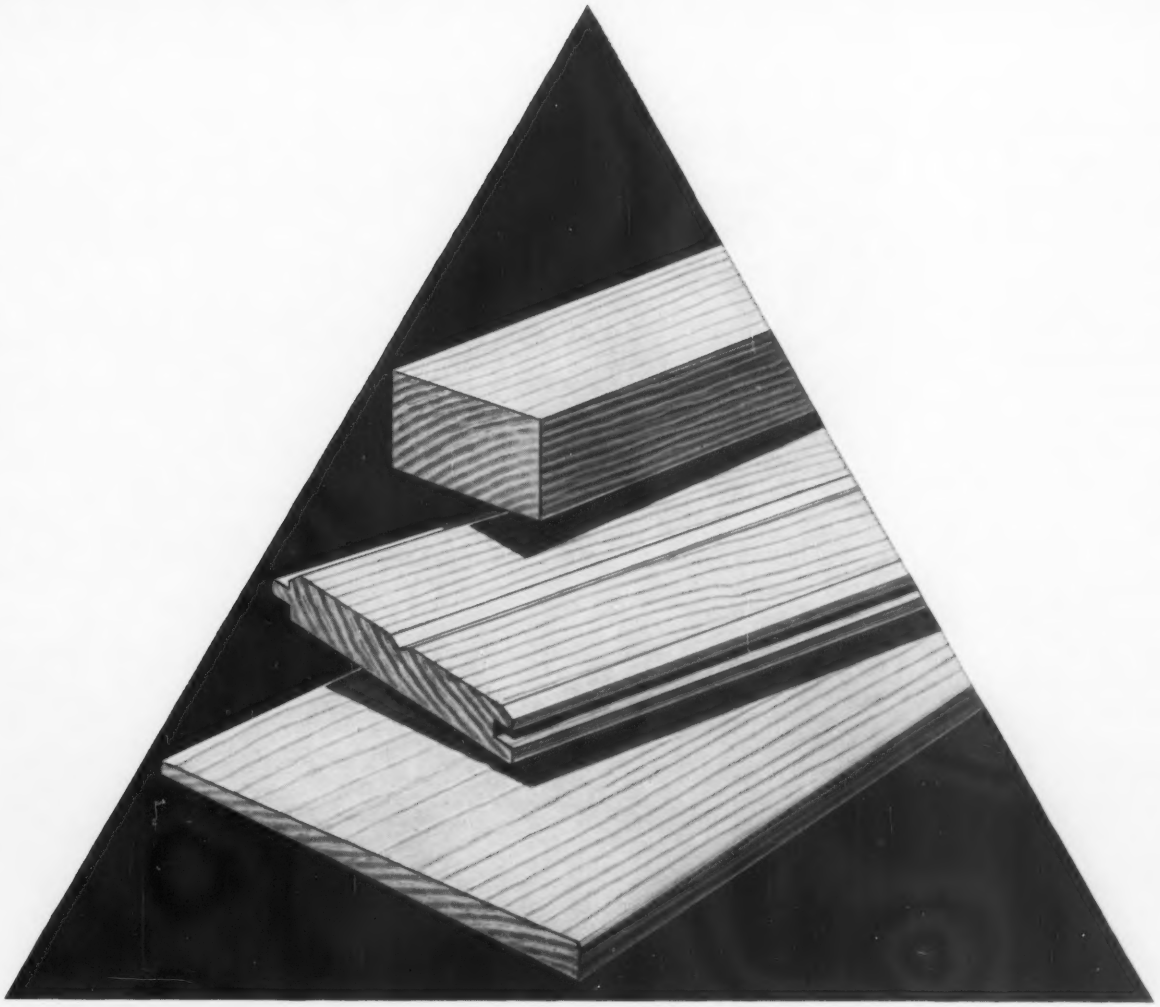


KILN-DRIED stands for greater freedom of design

Whether your planning calls for bold textural masses . . . sweeping planes . . . or delicate detailing . . . you'll find kiln-dried lumber successfully creates the effects you want, combining as it does natural beauty, strength, and high insulating value.

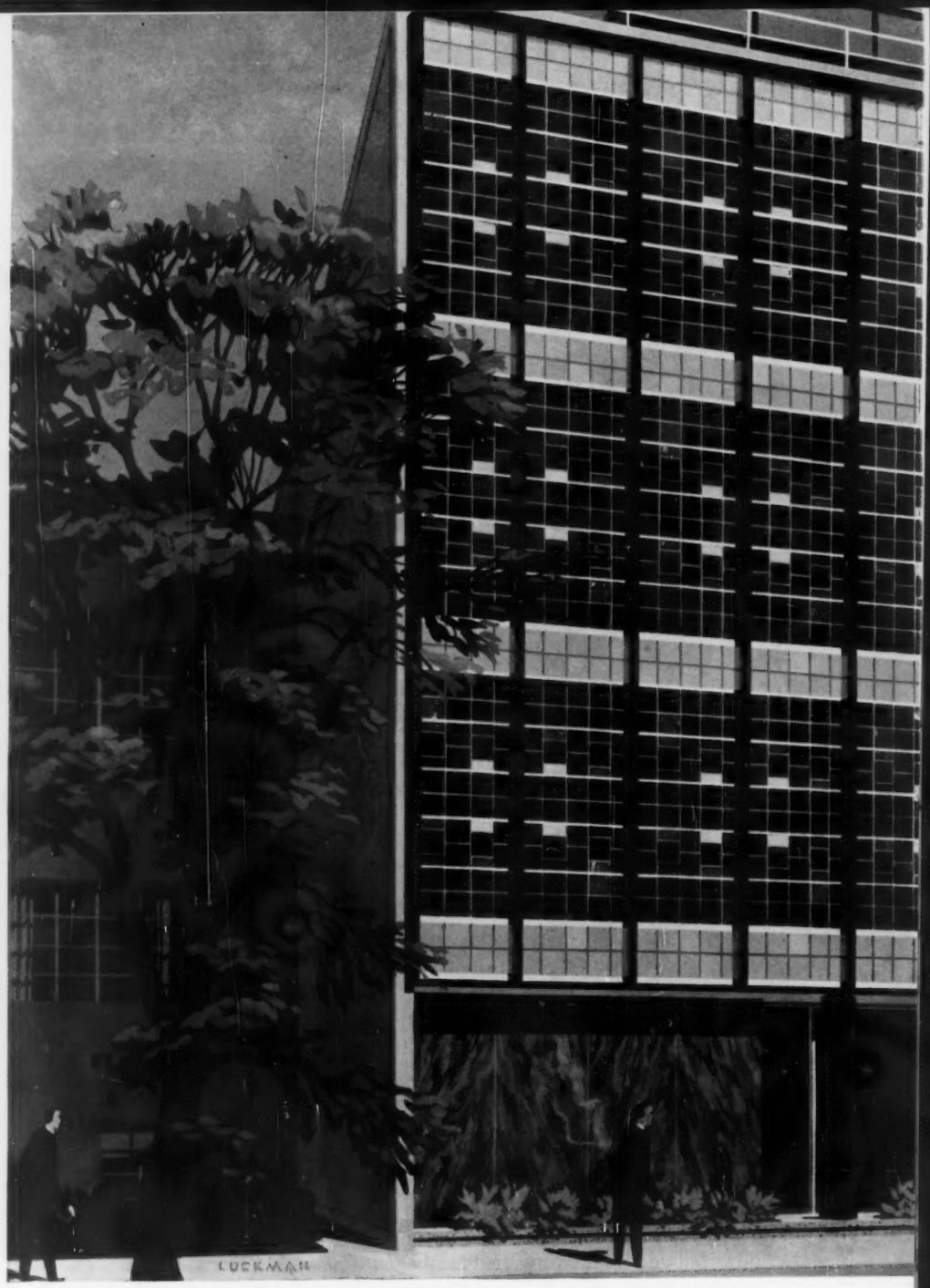
Weyerhaeuser's scientifically controlled kiln-drying process increases lumber's stability and nail-holding power, makes it easy to work. Moisture content is equalized so that each piece in the framing or the siding, in a wall or built-up moulding, works like a component part with every other piece and is equally resistant to dimensional change.

Many of the other structural and in-use advantages of kiln-dried lumber are outlined on the facing page. It's worth remembering, too, that its quality is an added assurance of your client's satisfaction. For further information, write: Weyerhaeuser Company, Lumber and Plywood Division, First National Bank Bldg., St. Paul 1, Minnesota.

Weyerhaeuser Company

Lumber and Plywood Division

Facade of the proposed office building for the State Employees Building Corporation in Sacramento, California, combines insulation value with handsome appearance. Thinlite panels of clear vista tiles, accented with colorful ceramic-faced glass tiles, were selected for floor-to-ceiling installation. They provide good vision while effectively reducing costs of air-conditioning the building. Vista panels also admit maximum light and provide low heat transmission. Spandrel panels are green for contrast. Gray anodized aluminum struts are custom-finished to the architect's specifications.



Complete freedom of design

with prefabricated

THINLITE

curtain walls

Office Building for the State Employees Building Corporation, Sacramento, California.
Architect-Engineer West America Engineering Co., Inc., San Francisco, California

As it has for so many other new buildings all over the country, Thinlite prefabricated curtain walls bring design distinction and beauty to the proposed office building for the State Employees Building Corporation in Sacramento, California.

For Thinlite combines all the excellences of curtain wall construction . . . plus almost *limitless design freedom*. Colorful random designs . . . exciting mosaic patterns . . . you have a wide choice of colors, shapes and textures, in stock or custom-prefabricated panels. No two Thinlite buildings need look alike!

Thinlite is a completely weathertight wall. A double-Neoprene gasketing system automatically locks out wind and weather. All component parts are prefabricated. Very little cutting and fitting are needed at your job site. And that means really big construction savings for your clients! They save on maintenance, too, because Thinlite panels are self-washing. Aluminum struts can't rust or rot.

Thinlite offers you a brand-new dimension in design freedom. For complete data file on Thinlite, write Kimble Glass Company, subsidiary of Owens-Illinois, Dept. PA-2, Toledo 1, Ohio.

THINLITE CURTAIN WALL
AN (O) PRODUCT

OWENS-ILLINOIS
GENERAL OFFICES • TOLEDO 1, OHIO

p/a views

(Continued from page 31)

wrote this letter he would not exactly like it, but someone had better look the situation in the face so we can have better architecture.

MRS. FRED C. VAN DUSEN
Jacksonville, Fla.

on raising taste

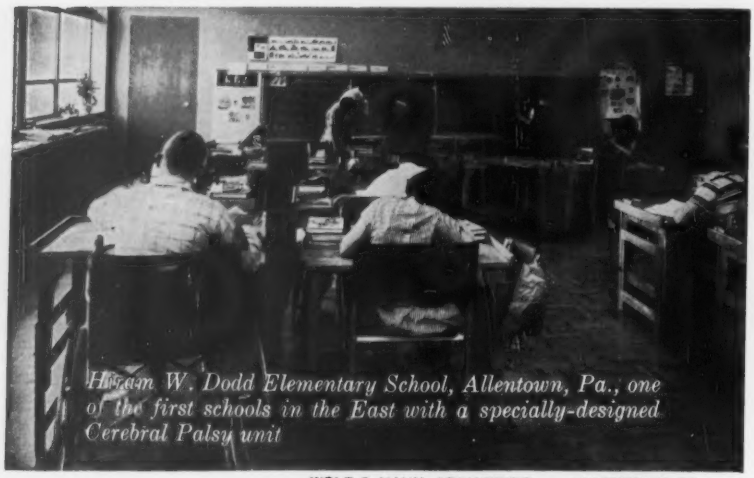
Dear Editor: It is my conviction that taste levels can*not* be raised by intelligent, objective, critical discussion—as you conclude in your P.S. in AUGUST 1959 P/A.

The people who may be in lower "taste levels" would not be capable of understanding any discussion on architecture; God knows, even the architects are not.

But even the most architecturally uninformed person will understand if he is subjected to *the space* of a good building. This is an emotional response and, really, that is what architecture is all about (more emotion than reason).

So to inform the lower brackets, we must *talk less* and demonstrate by actual experiences.

JOHN C. McEWEN
Kirkwood, Mo.



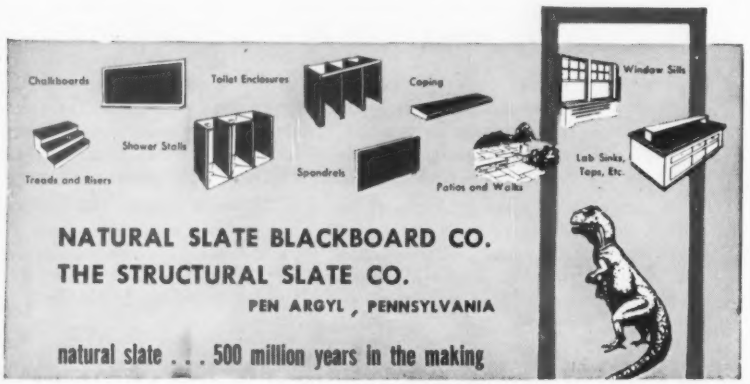
Hiram W. Dodd Elementary School, Allentown, Pa., one of the first schools in the East with a specially-designed Cerebral Palsy unit

WOLF & HAHN, ARCHITECTS ALLENTOWN, PA.

NATURAL SLATE CHALKBOARDS

. . because young eyes deserve the best!

The Hiram Dodd School is truly a step forward in education for the handicapped. Besides regular classroom space, it contains a complete, specially-equipped wing for its group of Cerebral Palsy students. And as forward-looking as the thinking behind this new school is the choice of natural slate chalkboards for every classroom, because of all chalkboards, slate communicates best. Only white chalk on slate produces the desired high contrast necessary to permit young eyes to see and grasp the written message instantly. Easy to clean . . . virtually indestructible . . . slate has the lowest annual cost of any other chalkboard. For timeless beauty, durability, readability, *specify slate quarried in Pennsylvania.* Inquiries welcomed on specific properties of slate.



notices

p/a congratulates . . .

ANDREW C. RICHARDSON, appointed as merchandising manager of SPRAYED "LIMPET" ASBESTOS, and WILLIAM H. MACKEY, appointed merchandising manager of the Asphalt Products Department, in the Building Products Division of KEASBEY & MATTISON COMPANY.

HOWARD L. RICHARDSON, elected executive vice-president of THE STANLEY WORKS.

JOHN A. GREEN, made Wholesale Division Sales Manager of the VIKING AIR PRODUCTS DIVISION of NATIONAL-U.S. RADIATOR CORPORATION.

MARGARET M. WALSH, appointed to the staff of the Decorator-Design Department of AMTICO FLOORING DIVISION of the AMERICAN BILTRITE RUBBER COMPANY.

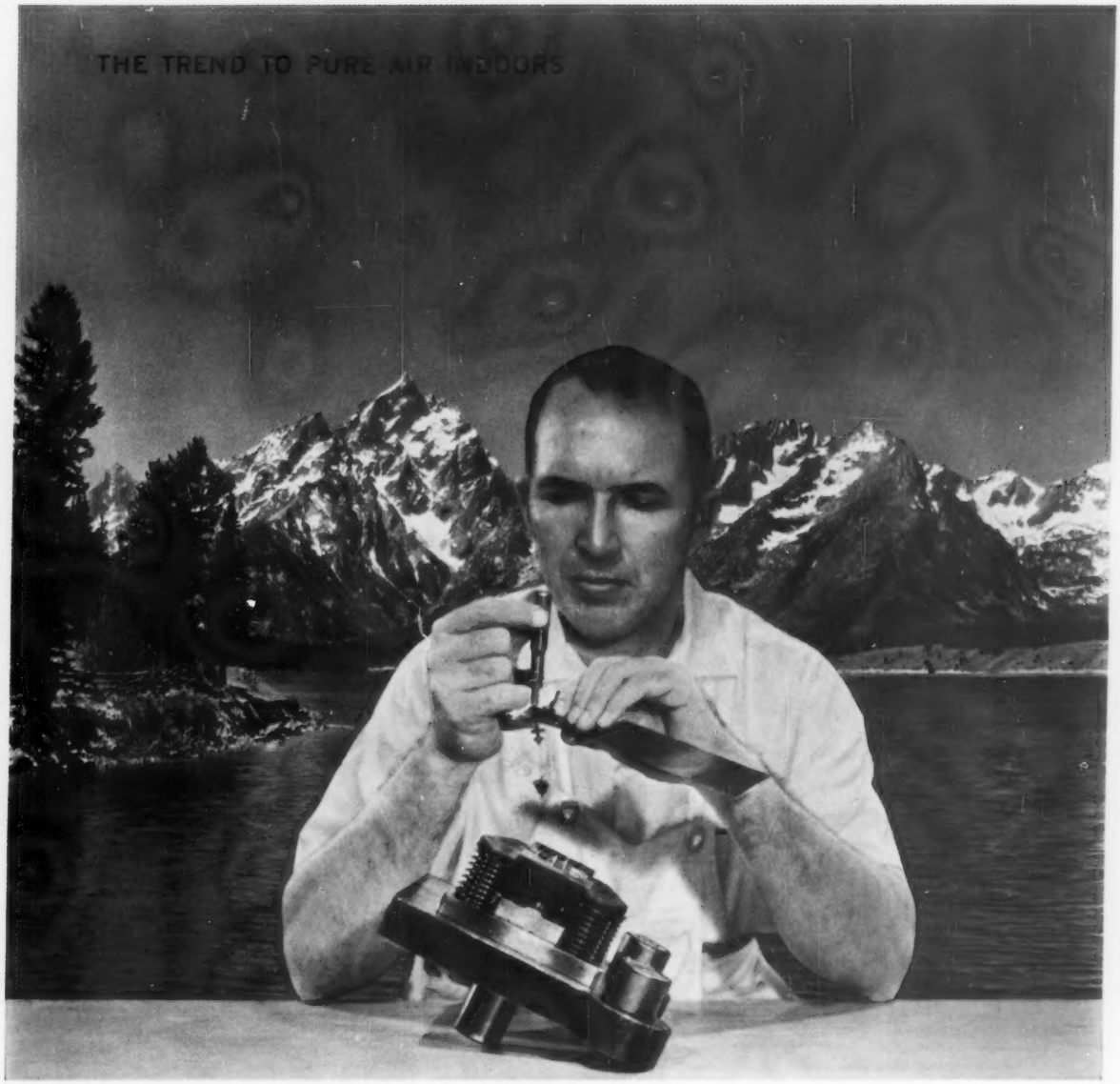
RICHARD T. WALSH, named manager of technical service and product planning for GENERAL ELECTRIC'S TEXOLITE Laminated Plastics.

F. R. AMTHOR, who joins HAMILTON MANUFACTURING COMPANY as engineering vice-president.

GORDON R. LICHTWARDT, appointed advertising manager of THE GENERAL TIRE & RUBBER COMPANY.

JOHN CROSSLEY, named sales manager of MURALS, INC.

LYNN G. STEDMAN, JR., named general sales manager of the PETERSON WINDOW CORPORATION.



Your industrial clients will appreciate the way electronically clean air increases productivity, reduces rejects and cuts maintenance costs

The trend to pure air indoors is accelerating in *all* types of buildings. Industrial plants are no exception. *Entire plants*, not just "problem departments," are being provided with air that's electronically cleaned and charcoal-filtered—free of odors and airborne dirt. In such a fresh, clean atmosphere, employees enjoy new vitality, are more productive. Pure air also means lower maintenance costs, better product quality.

Assure your clients of pure air indoors by recommending a Honeywell Electronic Air Cleaner and Charcoal Filter system. This system removes all odors and 90% of all airborne dirt. It cuts air conditioning costs, because less outside air is needed for ventilation, enabling you to specify a smaller air conditioning system. Call your nearest Honeywell office, or write Minneapolis-Honeywell, Minneapolis 8, Minn.

See us in Sweet's 1960 Architectural File, Section 30D/Mi.

75th YEAR — PIONEERING THE FUTURE

Honeywell

H HONEYWELL — First in Control — SINCE 1885

notices

ROBERT H. HERST, appointed general manager of PONDEROSA PINE WOODWORK.

GEORGE HUGH TSURUOKA, named manager of Housing and Cement Bureau, and S. H. WESTBY, named technical advisor at PORTLAND CEMENT ASSOCIATION.

M. M. ANDERSON, appointed as vice-president of engineering at STRAN-STEEL CORPORATION.

RICHARD L. GATES, named to the newly-created position of production development engineer for UNIT STRUCTURES, INC.

JOHN R. SCHOEMER, appointed consultant on architectural hardware for THE YALE & TOWNE MANUFACTURING COMPANY.

PETER QUAY YANG, retained by ROBERTSON MANUFACTURING COMPANY as a design consultant on architectural ceramic tiles, and to direct their advertising program.

RICHARD E. BARNES, named technical director at THE PERLITE INSTITUTE.

new addresses

P. L. GRIFFITH, elected vice-president at JAMES KING & SON, INC.

EDWARD D. DART, Architect, The Parke-Davis Bldg., 130 N. Franklin St., Chicago.

A. G. ODELL, JR. & ASSOCIATES, Architects, 102 W. Trade St., Charlotte 2, N. C. WILLIAM H. PETERSILIE, Architect, 302 N. Campus Cts., Manhattan, Kansas.

MILTON L. SCHEINGARTEN, Architect, 1147 E. Jersey St., Elizabeth, N. J.

SKIDMORE, OWINGS & MERRILL, Architects, Crown Zellerbach Bldg., 1 Bush St., San Francisco, Calif.

NEW YORK CHAPTER, AMERICAN INSTITUTE OF DECORATORS, 53 E. 54 St., New York 22, N. Y.

elections, appointments

ALFRED E. PICARDI appointed chief structural engineer in the Chicago office of SKIDMORE, OWNINGS & MERRILL, Architects-Engineers.

DEAN L. LASHBROOK, named as acting chief structural engineer of BELLMAN, GILLETT & RICHARDS, Architects-Engineers.

OSCAR BENJAMIN BEASLEY, Col., U.S.A. (Ret.), has been appointed European director and representative for the firm of DANIEL, MANN, JOHNSON & MENDENHALL, Architects-Engineers.

ROY C. NEUMANN, named deputy director of architecture for A. M. KINNEY ASSOCIATES, Architects-Engineers.

MARVIN G. STURGEON, made vice-president and director of engineering for the firm of CHARLES LUCKMAN ASSOCIATES, Architects-Engineers. VICTOR A. CUSACK has rejoined the firm as chief engineer.

For complete satisfaction –

permaCushion*

hardwood floors are jointly guaranteed

That's right, the PermaCushion floor system is guaranteed two ways — the flooring materials and the installation. These component parts are guaranteed in writing by *both* manufacturer and installer — certainly an expression of confidence in each other's work.

To you, this means complete satisfaction. It means, specifically, that any defects arising from faulty workmanship or materials will be corrected free of charge. When you specify PermaCushion, you can be confident of quality and responsibility.

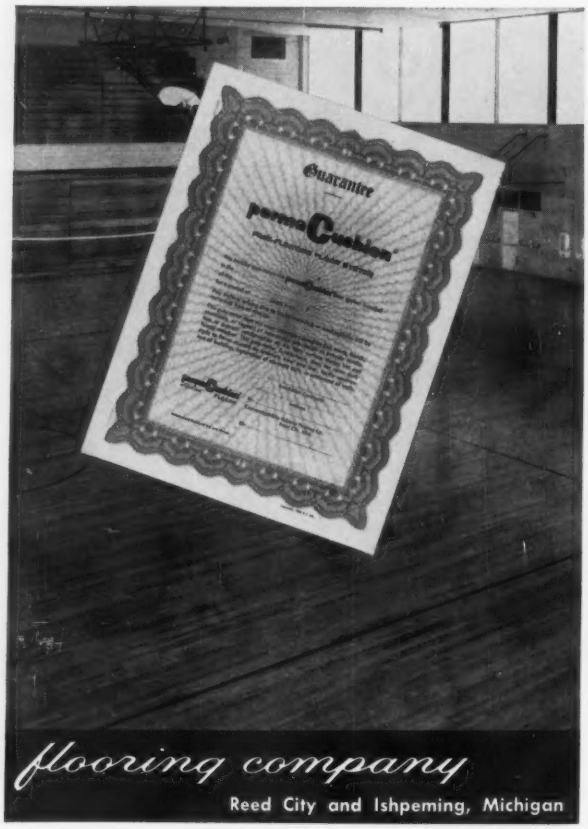
For information and name of your nearest authorized PermaCushion installer, write Robbins Flooring Company, Reed City, Mich., Attn: Dept. PA-260.

*T.M. Reg. U.S. Pat. Off. *U.S. Pat. No. 2862255

SEE OUR CATALOG IN SWEET'S

ROBBINS

WORLD'S LARGEST MANUFACTURER OF NORTHERN HARD MAPLE FLOORS



New Cork-Tex® bulletin board can take it!

You're looking at Cork-Tex®, the first bulletin board that combines the brilliant color possibilities of vinyl with the rapid healing properties of genuine cork. You choose the precise vinyl color and pattern that blends with your interior scheme.

And Cork-Tex® can take it! The resilient, unadulterated cork body pushes the vinyl cover back into place after tacks or pins (even scout knives!) are removed. No visible scars...Cork-Tex® stays looking as new as the day it was installed.

More good news: on-the-wall costs are lower than for many "substitute" materials, and maintenance-free Cork-Tex® wipes clean with mild soap and water.

The Cork-Tex® secret: Special adhesive permanently bonds unadulterated cork sheet to handsome, longer-lasting vinyl cover.

Many colors in stock. Write us and we'll have the nearest distributor contact you. He'll show you color swatches and price lists.

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WRITE FOR FULL INFORMATION: Bond Crown & Cork, Dept. C, 1819 N. Major Ave., Chicago 39, Ill.

"We far surpassed our expectations by the use of Penmetal® stud and Hush Clip"

...reports contractor for Coral Sea Towers

Coral Sea Towers is a forty-unit luxury cooperative apartment building on Bay Harbor Islands, Miami Beach, Florida. Structural partitions are of 8" poured concrete, providing highly efficient sound insulation for the apartments involved.

But as Mr. Frank Walker, the general contractor, points out, "We were faced with the problem of how to retain this excellent insulation on the non-structural partitions. I am pleased to advise you that we were not only able to achieve the desired results, but far surpassed our expectations by the use of your 2½" Penmetal steel stud and *Hush Clip*.

"The sound transmission loss through these walls is practically unbelievable and it is our intention to use this system whenever possible in the future. The speed and ease of erection as well as the low cost of construction convinced us that we had made a good decision when we chose your fine product."

The Penmetal *Hush Clip* system can provide a sound-transmission loss rating as high as 56.4 decibels! Send for folder 615-L which describes this unique system in detail.

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40 Central Street, Boston 9, Mass.
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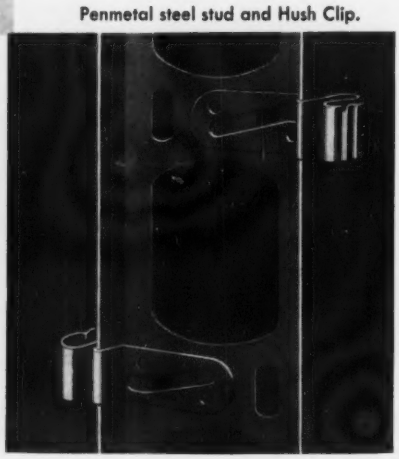
CORAL SEA TOWERS

Architect: Carlos B. Schoeppl, Miami, Florida
Structural Engineer: J. Pasco Sweat, West Palm Beach, Florida
General Contractor: Frank J. Walker Company, North Miami, Florida

PENN METAL COMPANY INC. 90th YEAR 1869 – 1959

Penmetal steel stud and Hush Clip.



PM-224

NEWS REPORT

Architecture's Monthly News Digest of Buildings and Projects, Personalities, New Products

P/A Awards Banquet, Seminar Held in New York

Architect Must Lead His Community: Rapson

NEW YORK, N.Y.—More than 200 architects and educators from all parts of the U.S. turned out with their wives and clients to attend the Seventh Annual Progressive Architecture Design Awards Banquet at the Hotel Park Lane, January 22.

Following a welcome from L. Bancel LaFarge, president of New York Chapter, AIA, co-sponsors of the banquet, guests witnessed the presentation of awards and citations by P/A Editor Thomas H. Creighton. A short speech of acceptance of the First Design Award was made by Client James H. Scheuer, who acclaimed the vision and design acuity of the group of architects responsible for the winning design (pp. 100-107, JANUARY 1960 P/A).

The keynote speech of the evening, a stirring call to arms for professional responsibility, was given by Ralph Rapson, Head of School of Architecture, University of Minnesota, and Chairman of P/A Design Awards Jury.

Serving on such a Jury, Rapson said, gives one an impression of current architectural thinking. "If . . . for no other reason than forcing all of us to pause and take stock of the architectural state of affairs, this Annual PROGRESSIVE ARCHITECTURE Awards Competition is a highly significant event. However, this Competition becomes doubly significant in that it gives a most revealing indication of possible future trends and directions in architecture and town planning.

Design Awards Jury Chairman Ralph Rapson delivers the banquet address.

"I know that I speak for the entire Awards Jury when I commend PROGRESSIVE ARCHITECTURE on this program."

Confessing that he was left with a "somewhat blurred impression of our brethren" after examining hun-

Continued on page 69

L. Bancel LaFarge

Ralph Rapson

James Scheuer

Broader design possibilities, lower costs

with this new kind of wood paneling

7/16" ARCHITECTURAL CRAFTWALL

A new type of factory-finished wood paneling. Has exceptional strength and rigidity. Works and handles like the finest ¾" plywood paneling . . . yet costs far less!

New, solid-feeling Architectural Craftwall is made from choice, hardwood veneers bonded to a ⅜" center of Timblend, Roddis' amazing man-made board. *This exclusive Timblend center makes the big difference!*

A unique, wood-blend shaving board, Timblend gives extra strength and rigidity . . . assures maximum freedom from movement after installation. Architectural Craftwall stays put!

No underlayment needed! Architectural Craftwall goes up fast . . . directly on studs or furring strips. No costly, time-consuming underlayment needed. Install with Roddis Contact Cement. Or use nails if preferred.

Sound reduction properties are impressive, too. Tests prove acoustical values of Architectural Craftwall are comparable to plaster or drywall construction.

A wide choice of woods and styles enhances your design possibilities. Select from Birch, Silver Birch, Pastel Cherry, Oak, Sherwood Oak, Walnut, Elm, Cherry or Mahogany. *Each is completely factory-finished, ready to install.* Available V-grooved only or V-grooved, cross scored and pegged. All panels V-grooved at veneer joints also. In regular plywood sizes . . . *plus lengths to sixteen feet.*

Architectural Craftwall is also available in standard or special size panels, *without grooves,* with matched flitches in the wood of your choice.

For free sample just send the coupon.

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Please send free sample and information on 7/16" Architectural Craftwall.

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RODDIS does wonderful things with wood

For more information, turn to Reader Service card, circle No. 300

P/A Awards Festivities

Continued from page 67

dreds of projects ranging from "occasional brilliance to utter and complete confusion," Rapson said he coined a new definition of the Architect: "A fascinatingly frustrated, creative, long-hair, passing as an artistic, esthetic virtuoso, yet a person possessing exhaustingly inaccurate technical know-how while posing as a practical builder—expert on the basis of being able to develop, in an impossibly short interval of time and after innumerable changes, an infinite series of incomprehensible answers calculated with slide-rule inaccuracy from vague assumptions based on debatably documented data, taken from ill-informed apprehensions, and painstakingly produced with instruments of problematical precision by a pleasant peasant of dubious reliability, of indeterminate integrity but, of course, of monumental mentality, for the avowed purpose of beautifying, amazing, and confounding a defenseless and unsuspecting citizenry . . . unfortunate enough to have asked for the conclusions in the wrong fashion in the first place."

Rapson said that the Jury generally was disturbed by repetitive appearance of architectural clichés in many of the entries—"It was difficult to tell the difference between a bank and a bowling alley, a sausage factory and a school." He recalled a remark of one Jury member: "If you could eat architecture today, it would taste like K-rations."

Most architects, according to Rapson, seemed to be suffering from "structural-itis" and "form-itis." It seemed that most of the entries were highly confused between structural novelty and honest esthetic design. "There was almost every conceivable shape and form piled high, wide, and handsome, quite irrespective of need or function . . . Most designers shied away from the obvious truths as though these were something to be ashamed of."

"There was considerable that was good," he said. "It was interesting, and perhaps significant, that the best things did turn up in the area of urban design; with the possible conclusion that architectural thinking is becoming more and more aware that the individual building is not as important as it, too often unfortunately, has been in the past, and that we, both the architects and the public alike, are becoming more and more aware of the total environmental picture, and that spaces between buildings and the relationship of these buildings and spaces to one another are more important than the individual structure or individual façade."

Making a plea for the consideration of the townscape as a total design, Rapson cautioned architects against show-off architecture, ". . . while there is need for variety and individuality, it is a grave mistake to assume that every building must scream out its individual importance. Not every building—or space—can be or deserves to be a strong focal point. Not every building can have great symbolic value . . . Architects really should face up to the fact that few are sensitively qualified to produce sculptural buildings.

"If ever there was a need for sensitive and thoughtful design, it is now," Rapson said. "Our times have produced far-reaching advantages in science and technology as well as highly significant social and political change.

"This is an age of mass production, mass standardization, mass distribution and communication, and rapid economic growth; yet all the while something is lacking. . . . All too often, beauty is the missing element —the visual delight one receives from sensitive and loving handling of positive and negative space, the enrichment of color, texture and detail and the play of sun and shade. . . .Scientific and technical progress has placed in our hands the means of creating truly superior environment. We have the ability to control architectural form at will."

Attacking the indifference that allows our cities to become areas of neoned-and-asphalted ugliness, Rapson reminded the audience that it is the architect's responsibility to the community to keep the people alert to these dangers. "This accumulated ugliness results in part from com-

Sert (center) chats with Rosenfields

DeMars, Mrs. Creighton, Warnecke

Kahn and Mrs. Sert

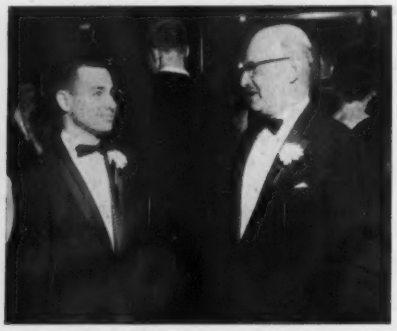
Metcalfe, Sheoris, Kidder-Smith

Mann and Harrover

Creighton, Sasaki, Masten, Kump

Hinds, Sheoris, Glass

Sasaki, Mrs. Sasaki, Jones



Daley and Steffian

Stein and Katz

Barnes, Comm. Goheen, Mrs. DeMars

Lundy presents project at seminar

Continued from page 69

placency and irresponsibility. There is a lack of strong and vigorous environmental critics, people like yourselves who, by their training and understanding, are qualified to hammer away constantly at this deplorable state of affairs. As architects and planners, we have often failed to make uncompromising stands on matters of vital nature."

Rapson wondered if real progress can be made until there are basic changes in our national outlook. "Our times have been described as having the mediocrity of the 'throw-away-paper-cup' attitude that prevails in our economy and taints everything we think, say and do. This should be seen as the cheapening thing that it is and should not be allowed to grind out everything of real value.

"Is it necessary that everything be expendable? Is it necessary that land be ruthlessly squandered? . . . One has an uneasy feeling that there is little hope for real accomplishment until we revise our attitude that there is always plenty of virgin land to move on to after we have messed-up all about us . . . It is fundamentally necessary for human survival that man bring order into his environment. Unless he brings life's situations into an integrated whole, he cannot continue to grow and develop."

The Monday after the Design Awards ceremonies and seminars, Rapson appeared coast-to-coast on the "Today" television program, discussing the Program and showing four of the winners.

Critiques of Winners

The day following the Design Awards Banquet, architects and students attending the annual P/A Design Awards Seminar heard distinguished architects, critics, and educators discuss four of the award-winning projects. The all-day seminar, co-sponsored by P/A and the architectural schools of Columbia University, Pratt Institute, and Cooper Union, was held at The Architectural League.

Victor Lundy, presenting his Unitarian Church in Westport, Conn., said that the design was intended as a visual statement of that faith. "Unitarians agree to disagree; they are very individual. Therefore this building is not finite; the observer completes it himself—in this sense, maybe it is not a 'building'." Prof. James Fitch of Columbia made a knowledgeable critique of the Lundy project.

Vernon DeMars and Donald Reay presented the First Award Winner, a redevelopment scheme for Marin City, California. DeMars said that the beautiful site, a sensitive client, and co-operative Government officials gave the designers a chance to avoid the "projectitis" look of most such developments. Reay noted that, just as the cathedral evokes Gothic times and the railroad station or factory reminds us of the Victorian era, the large-scale community development is becoming the identifying building class of the mid-Twentieth Century. It is therefore incumbent on architects to see that these are created with care and humanity, he said. Commenting on DeMar's statement that the Marin City buildings were designed to be fresh after ten years and more, Louis I. Kahn, in his critique of the project, said that we "cannot predict design," but that we can build variety into such a project with a "harmony of systems."

In presenting their Eastwick redevelopment for Philadelphia, George Qualls and Robert Geddes of Geddes, Brecher & Qualls, showed slides of the painstaking research and examination of different planning and design approaches that go into such a project. Prof. William Breger of Pratt Institute, in offering his critique, commented that perhaps more space could have been provided between some elements of the plan in areas where they almost touched. He conceded, however, that this did make for interestingly-shaped areas.

The final project of the seminar was Foothills Junior College in California, presented by Architect Ernest J. Kump. It was criticized by Pratt Institute Prof. Sibyl Moholy-Nagy, who complimented the architect on a successful example of regional architecture, but took issue with the lack of areas for students to gather and a certain sameness she felt in the design of the buildings.

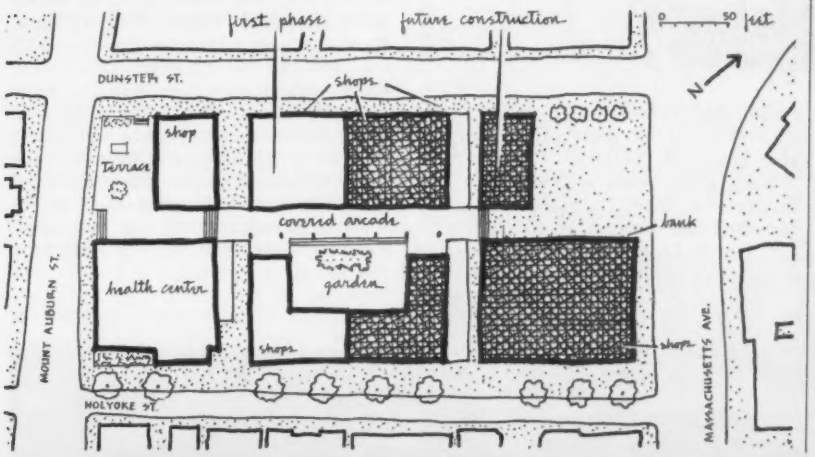
Harvard Health Center Leads Redevelopment Plan

Co-ed Infirmary Will Be Part of Development

CAMBRIDGE, MASS. — Excavating has started for the first element in the redevelopment of an entire business block by Sert, Jackson & Gourley in the newly-developing section of Harvard. Major unit of block will be a ten-story University Health Center and Office Building. Also included will be three commercial areas—when full block is completed, there will be 27,000 sq ft for commercial use (see plan below).

The Health Center will occupy six floors in the building, and University offices will be on four upper floors and penthouse floor. Emergency room, X-ray equipment, physical therapy, and kitchen will be in basement; waiting rooms, medical clinic, and laboratories on ground floor; offices, records, specialized clinics, and conference rooms on second and third floors; and dental services, employe health survey, and Division of Environmental Health and Safety on fourth floor. Fifth floor will be occupied by Stillman Infirmary for students of Harvard and Radcliffe College (which will also share other medical facilities). There will be 46 beds in two Harvard wards and one Radcliffe ward—expandable to 82 beds for emergencies.

Precast concrete panels and colored ventilating panels will give sculptural, colorful effect to exterior. Entire block will be laced with pedestrian plazas and arcades.

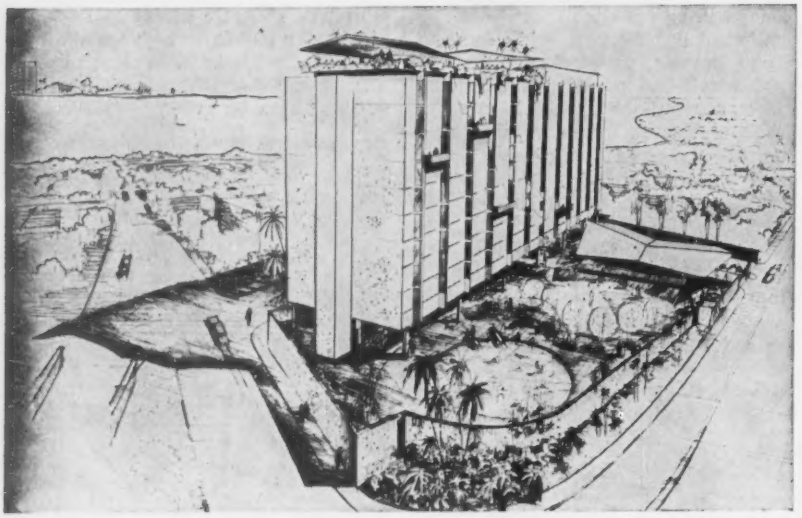


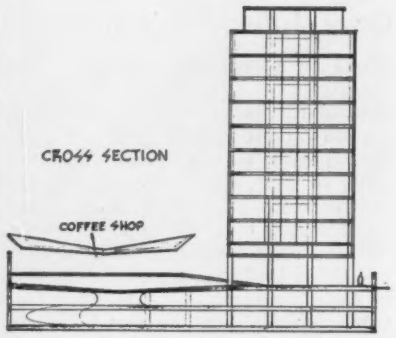
Center will be set in from street to provide entrance terrace.

Photos: Robert D. Harvey Studio

Dean Sert of Harvard Graduate School of Design prepared preliminary plans for Harvard University Health Center.

San Juan Hotel Will Be On Pedestal to Enjoy View

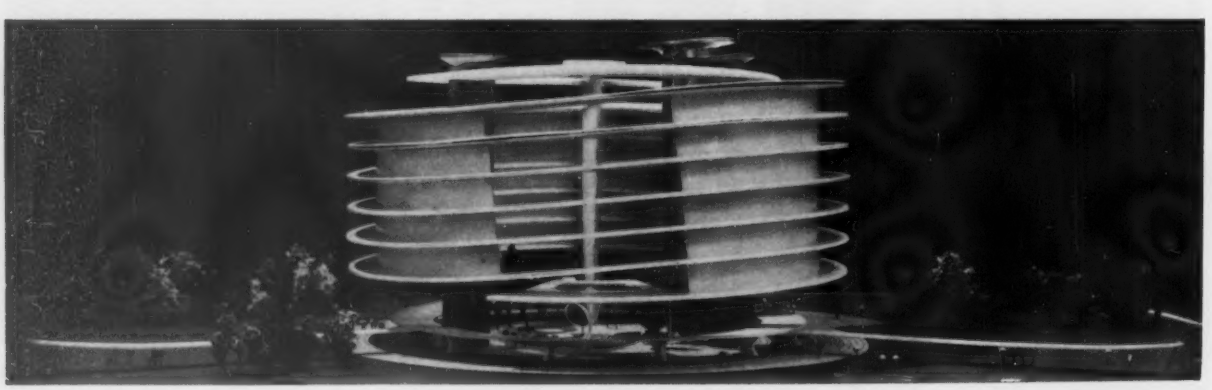




Section shows hotel raised on parking platform, with cafeteria at base.

SAN JUAN, P. R.—A new San Juan hotel, to be situated adjacent to a traffic interchange on the north and a slum area on the south, will capitalize on tremendous views of city and bay to east and west by being raised on a "plateau" containing parking facilities. The hotel is designed to charge reasonable rates rather than steep ones charged by most other comparable hotels in the city.

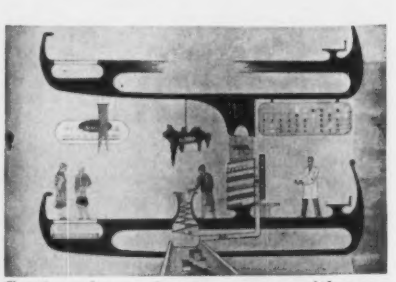
Each guest room will view the bay through a three-ft glazed opening. Masonry fins slanted at 45° will protect guests from the sun, and provide a "viewing platform" for prospects of the water and town. Suites will have more luxurious balconies. The architects, Curtis & Davis, New Orleans, state that corridors on typical floors are splayed to provide interesting space sequences rather than the usual utility-tunnel feeling. They say that these corridors will reduce the hotel's over-all width by providing maximum space in guest rooms *only* where required to install fixtures and conveniences. Structure will be reinforced concrete. Walter Rooney is Associate-in-Charge of Project.



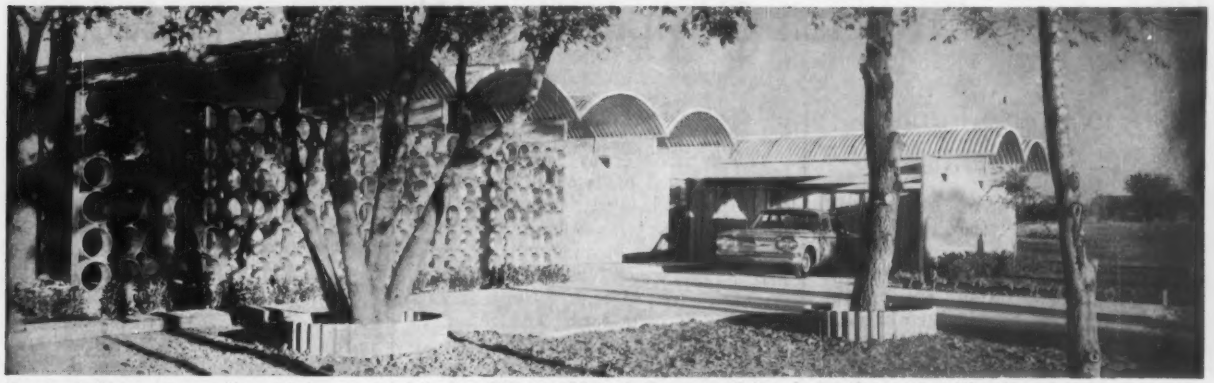
Circular Supermarket Saves Shoppers Steps

NEW YORK, N. Y.—A fully-automated supermarket where shopping can be completed in as little as 10 minutes has been designed by Pratt Institute Prof. William N. Breger and Michael Brill. Prototype design was commissioned by Daitch-Shopwell chain.

The shopper enters the building and, after checking pets or children in a central ground-floor area and receiving a tag with code number, takes elevators to the top of the seven-ramp structure. From here, she moves slowly down on a circular belt, stepping off to mark with her code number any items she wants. Upon reaching the checkout station on the ground level, she inserts her code tag and sees her list of purchases—here she can reject items or order something else. After paying the automatically-rendered bill and picking up her children or pets, she drives to a parcel pick-up area where she presents the receipted bill and receives her groceries. Model was shown at N.Y. Coliseum.



Section shows shopping ramp with purchases proceeding shopper on conveyor.



Research house shows diversified uses of Asbestos-Cement. Material was used for decorative and utilitarian purposes.

New Uses Found for Asbestos-Cement in Research

Versatile Material Serves As Roof, Walls, Screens

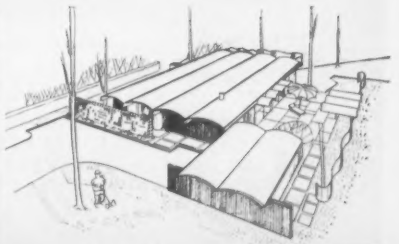
OKLAHOMA CITY, OKLA.—What is called the 20th Century's first man-made, contemporary building material—Asbestos-Cement—is seen in a number of new guises in a new research house recently opened here. Co-sponsored by Asbestos-Cement Association and *Living for Young Homemakers*, the house was designed by Architect R. Duane Connor, Oklahoma City.

Integrally-colored Asbestos-Cement tiles were used for flooring in main living area. Sheets of same material were used as bathroom walls and for kitchen-counter surfaces. Sections of Asbestos-Cement pipe in two sizes were used to create a unique screen at the front entrance. Corrugated sheets were used as room dividers, as entrance foyer canopy, and, in landscaping, for screens, fences, and treewells.

Opaque curtain walls of the house are of an integrated insulation curtain-wall panel consisting of two Asbestos-Cement sheets laminated on a foam-plastic core. One sheet has three-dimensional texture and the other is flat; they are interchangeable for interior and exterior.

Trough of vaulted roof sealed by corrugated batten and roof cement.

Arched roof is composed of two Asbestos-Cement sheets bent on steel forms, with insulating core of lightweight cellular concrete. Arches span 10 ft along chord, with rise of 24 in. at midpoint. Sheets are 36 in. wide, and each panel covers 30 sq ft floor area. Roof panels butt against each other with joints sealed by corrugated batten and roof cement.



Photos: Bill Margeria

Roof vaults and decorative screen of Asbestos-Cement enliven research house.

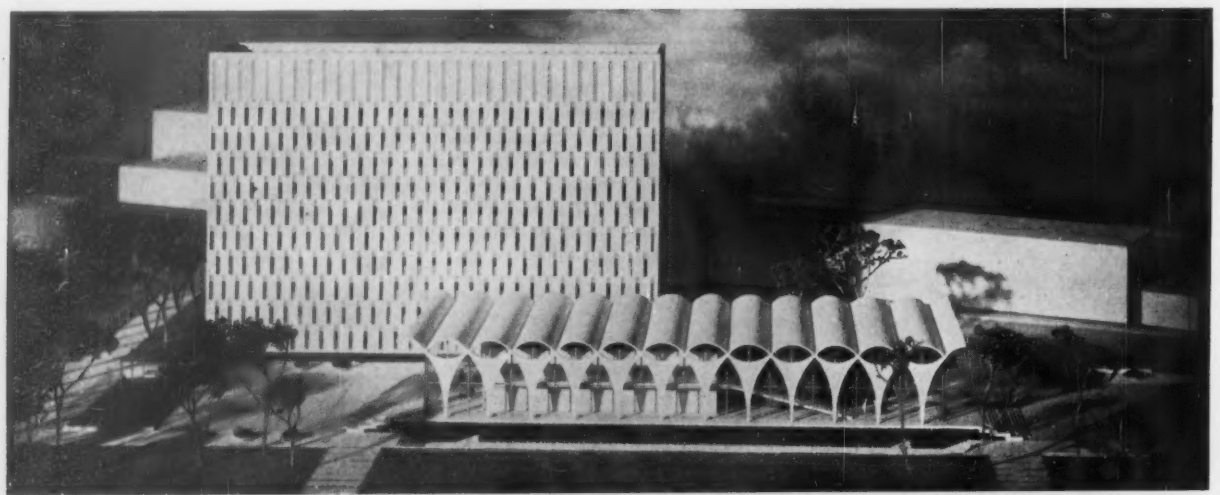
Winnipeg City Hall Competition Winner Selected

Units to House Public, Business Elements

WINNIPEG, CANADA—An International Jury composed of Pietro Belluschi and Ralph Rapson, U. S.; Peter W. Thornton and Eric W. Thrift, Canada; and Alfred Roth, Switzerland; with John A. Russell, Canada, as Professional Advisor, has announced selection of the winning design for the new Winnipeg City Hall. From a total of 92 entries received from throughout Canada, the design of home-town firm Green, Blankstein, Russell & Associates was chosen. (Not the same Russell as the Professional Advisor.)

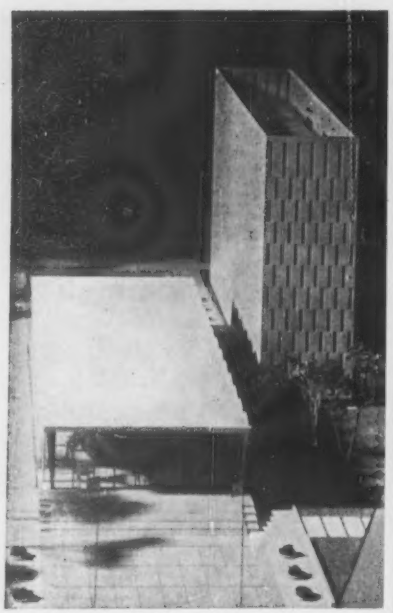
The winning entry provides a City Hall composed of two buildings connected by a glass passageway. A two-story building with a vaulted-concrete roof and side and end walls of glass will furnish space for ceremonial, public, and semi-public functions, including council chambers. The ten-story tower will house the day-to-day, administrative offices of the city government. The office building will be faced in Tyndall stone, with windows alternating on even and odd floors to form an interesting pattern. Beneath the buildings will be an underground parking lot for 360 cars.

The Jury, which had made a competition requirement that designs respect the siting of the old Legislative Building as terminal point of an adjacent boulevard, felt that this proposal met the requirement beautifully, and, indeed, that it "forms an admirable balance of masses within the area, since its high office block will be linked visually to the Legislative Building and the new Provincial Office Building." Also admired were the design's separation of functions, and creation of two spacious plazas.



Side view of proposed Winnipeg City Hall emphasizes separate functions of public section and administrative tower.

Photos: Henry Kalen



Two elements of City Hall are connected by glassed walkway.

Site photo shows relation of new buildings to older Legislative Building.

PERSONALITIES

If CHARLES R. COLBERT ever got a commission to design a ship, he could fill it with ease, for in addition to architectural degrees from University of Texas and Columbia University, he took graduate courses in naval architecture at University of Michigan (to add to this "Renaissance-manship" he even threw in law courses at New Orleans's Loyola University). This educational background, coupled with his ex-directorship of Texas A&M's Division of Architecture, and service on the architectural faculty of Tulane, admirably equips "Chuck" Colbert for his new—and most important—job: Dean of School of Architecture of Columbia University, succeeding Leopold Arnaud. Still senior partner of the busy New Orleans firm of Colbert & Lowrey, he numbers among his clients such disparate entities as Aeronaves de Mexico, Douglas Fir Plywood Association, Philadelphia Mall Corporation, and—for planning—the Louisiana cities of Lake Charles and Lafayette. During World War II, he served in the Navy, overseeing construction of ships, docks, and facilities in this country and on Okinawa. Colbert has listed the objectives of an architectural school: "to prepare the future architect, to inspire and assist the active professional, and to inform the public at large of the aims and obligations of the architectural profession." He states that "a prime essential for the School is an academic and administrative climate allowing reasonable academic experimentation and opportunities for real community service projects. There must be room for needed educational experimentation and search for educational method, even at the cost of failure. An energetic, spirited, and even inspired teaching and research staff must be maintained, and outstanding students must be attracted to the School and challenged to their ultimate potential. In such a climate, there is no reason to doubt the emergence of an architectural school that will serve in outstanding manner the changing needs of our society." When told of the new deanship, one of Colbert's old students, currently heading the New York office of a leading New Orleans firm, said, "Columbia will really start buzzing. Colbert's the best teacher I ever had!"

DR. EDWIN S. BURDELL retires as president of The Cooper Union for the Advancement of Science and Art at the end of this month to become, at UNESCO's request, president of the Middle East Technical University, Ankara, Turkey. His assistant, DR. JOHNSON E. FAIRCHILD, will act as president until a permanent appointment is made. Winning designs and plans for expansion of the Turkish university were recently selected by an international jury which included G. HOLMES PERKINS, Dean of the School of Fine Arts at the University of Pennsylvania. Turkish architects TURGUT CANSEVER, ERTUR YENER, and MEHMET TATAROGLU won first prize, and second place went to the American team of CHARLES W. SCURLOCK, BURTON L. KAMPNER, EDWARD HAMMARSKJOLD, and WILLIAM MURCHCURHEIM.

WILLIAM ADAMS DELANO, Fellow of AIA for almost 50 years, died at the age of 86. Among his outstanding commissions were the American Embassy in Paris, Japanese Embassy in Washington, Knickerbocker, Colony, Brook, and Union Clubs in New York, and the 1949-52 renovation of the White House. He retired as Senior Partner of Delano & Aldrich. He received the AIA Gold Medal in 1953 . . . . Distinguished realtor ALEXANDER M. BING died in New York. A pioneer in low-cost housing, he was the far-sighted client for Sunnyside Gardens in Queens, N.Y., and Radburn community in Fair Lawn, N.J., which were designed by CLARENCE STEIN . . . . ELWYN E. SEELYE, senior partner of Seelye, Stevenson, Value & Knecht, consulting engineers, died at the age of 75.

When RICHARD J. NEUTRA came to this country from Vienna in 1923, he worked first with FRANK LLOYD WRIGHT at Taliesin East. Moving to California in 1926, he set up his own practice, which came to include commissions in South America, Puerto Rico, the United States, and the Pacific islands. Associated with ROBERT E. ALEXANDER from 1949 to 1959, Neutra is again a "loner." A consistent honors winner, he most recently received from Austrian Chancellor Julius Raab the Medal of Merit of the Wilhelm Exner Foundation, awarded annually to those outstanding in the arts and sciences. Since Neutra is working full time to finish the Gettysburg visitors' center in time for ceremonies in Lincoln's anniversary year, U.S. Ambassador to Austria H. Freeman Matthews received the award for him in Vienna.

FREDERICK GUTHEIM reports that the new Executive Building on Lafayette Square, Washington, D.C., of which he wrote in his December column for P/A NEWS REPORT, is by PERRY, SHAW, HEPBURN & DEAN, with SHEPLEY, BULFINCH, RICHARDSON & ABBOTT, both of Boston . . . . PHILIP T. COFFIN is General Manager of newly-established Structural Division of Aluminum Company of America; new division will encompass design, engineering, sale, and promotion of aluminum in structural field . . . . Seven noted firms will design houses in new Florida community, Cape Florida, on Key Biscayne. They are: ROBERT B. BROWNE, ROBERT M. LITTLE, EDWIN T. REEDER ASSOCIATES, ROBERT FITCH SMITH, WEED & JOHNSON, JAMES DEEN, and GAMBLE, POWNALL & GILROY . . . . International Council for Building Research Studies and Documentation recently elected as president DR. F. M. LEA, Director of British Building Research Station, Garston, U.K. . . . ROLAND A. WANK, New York, received an Honory Doctor of Laws degree from Fairleigh Dickinson University, New Jersey. . . . The eighteen Russian engineers visiting FRIEDMAN, ALSCHULER & SINCERE, Chicago, were particularly interested in the use of plastic and aluminum.

Upon graduation from Cornell architectural school in 1930, PHILIP WILL, JR. had walked away with the Shreve, Lamb & Harmon professional fellowship, thereby presaging a career rich with awards and honors. Since he is in his second term as first vice-president of AIA and a good bet to be its next president (he is the only nominee at this writing), it is devoutly to be hoped that Phil Will is inured to a diet of chicken à la king and cold peas, for the future stretches before him as one long official banquet—giving or receiving awards. Not only a noted school architect in his guise as partner of Perkins & Will, but also a respected lecturer and critic, Will has done educational duty at Washington University, at the universities of Minnesota, Illinois, and Kansas, and at his alma mater.

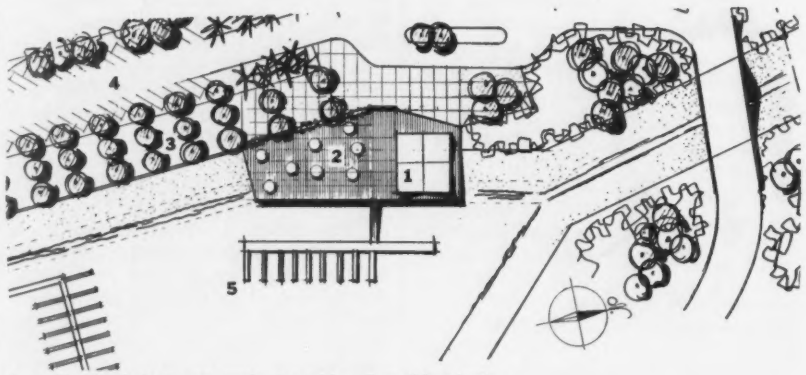
Sketches by Ramiro Cabellotti

Playful Pavilion Designed for San Francisco Bay

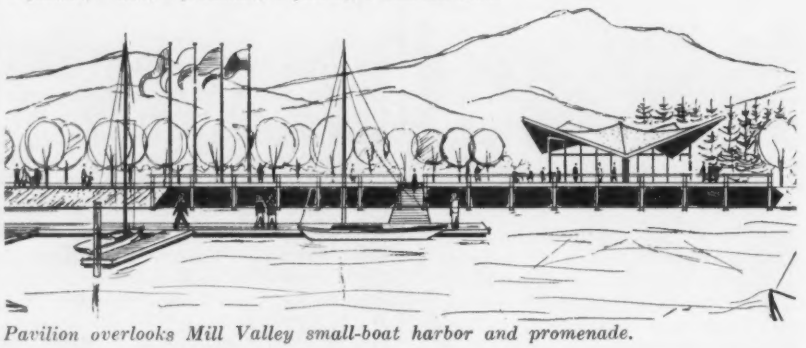
MILL VALLEY, CALIF.—In what the designers call the "dream playland of all architects," Strandgaard & Brummett, San Francisco, have been commissioned to create a lounging and service pavilion for a new small-boat harbor nestling under Mount Tamalpais across bay from San Francisco.

Initial designs for this enviable project indicate a glass structure roofed with four connecting hyperbolic-paraboloid shells made of plywood and covered with colored plastic. The roof, supported at four points, will cover harbormaster's office, public lounge, and kitchen areas. The structure will sit upon a large deck overlooking the bay. Deck will be two-in. planking spaced apart outside and, inside, connected tongue-and-groove "made like a ship's deck."

The master plan for the harbor project (Bala & Strandgaard, Engineers) is the first to be approved under new California law for aid to municipally developed small-boat facilities. A landscaped promenade will follow the curve of the harbor, separating it from parking and traffic. Future elements include launching facilities, fueling station.



1 *pavilion,* **2** *deck,* **3** *promenade,* **4** *parking,* **5** *small-boat berths.*



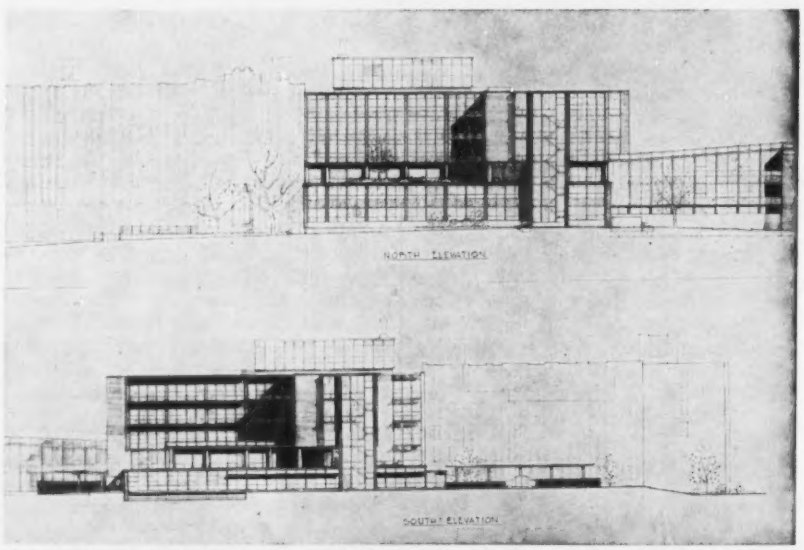
Pavilion overlooks Mill Valley small-boat harbor and promenade.

Hospital Addition Is Vertical on Postage-Stamp Site

WORCESTER, MASS.—Worcester City Hospital is a typical late-19th and early 20th Century pavilion-type hospital most of whose units have been declared unacceptable under the Hill-Burton Act. The desperate need for new beds has resulted in an interesting solution to a problem confronting many other small cities.

Using old pavilions until completion of construction, a new element has been planned, and is under construction next to latest, 1938, building. Due to extreme space limitations, the addition had to be designed for a 160 ft by 210 ft site. The result is characterized by the architects—Isadore & Zachary Rosenfield and E. Todd Wheeler—as "a vertical building with strong functionally horizontal elements." When bids came in on the five-story design, it was discovered that an additional floor could be added for little money.

Ground floor contains sources of service and supply. First floor has diagnostic and therapeutic facilities, admissions, offices, gift and coffee shops. Emergency, outpatient, laboratory, and X-ray departments are related on this floor. Second floor accommodates staff lounge and cafeteria, medical records and library, and physical medicine section. Third floor contains pediatrics. Fourth, fifth, and sixth floors are "typical," although the fifth is used for intensive care cases, being adjacent to operating department. Nursing units are square "pinwheel" type, but it was found that by extending each bedroom row beyond square, there could be 62 instead of 40 beds.



North and south elevations of hospital addition show horizontal emphasis.

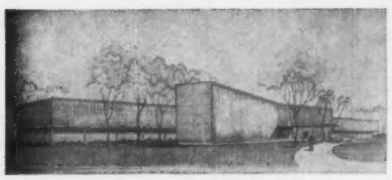
P/A's New Look to Arrive In May Issue

Readers last month had a "preview" of the total redesign P/A currently is undergoing when they received the January P/A NEWS REPORT. In the May issue, the entire magazine will blossom forth with its cover-to-cover new look.

Advising the Publisher and Editors of the magazine on the new design has been the well known architectural writer and design consultant, John Peter, whose credits include the books *Aluminum in Modern Architecture* and *Masters of Modern Architecture*. He has devised crisp, exciting layouts consistent with P/A's policy of presenting critiques, technical discussions, special-interest issues, and practice of architecture information of most value to the profession. In addition, Miss Joan Hurley, a talented and imaginative designer, has joined the P/A staff as full-time Art Director.

Cigarette Factory Will Double Thailand's Yield

Complete new cigarette factory with daily production capacity of 20 million cigarettes is scheduled for Bangkik, Thailand. Plant was designed by Litchfield, Whiting, Bowne & Associates as architectural and engineering consultants for American Machine &



Foundry Company, which owns prime contract with Thailand Government Tobacco Monopoly. Three structures are planned: two-story factory and office building, employes' canteen, and service building. Canteen will contain 700-capacity, plus audio-visual facilities for training and entertainment. Management dining room will be in main building. Buildings will be fully air conditioned.

Fire-Alarm Center Guarded Against Nuclear Attack

New St. Louis Fire-Alarm Center is protected against both nuclear attack and its subsequent dust, smoke, and fallout. Designed by Hellmuth, Obata & Kassabaum with John D. Falvey as consulting engineer, the center is covered with a 12 in.-thick, reinforced-concrete roof, over which is an 18-in. earth layer. The handsome, curved, south wall, with its brick arches, is the only exposed side of the structure; it is barricaded in time of emergency. Air-conditioning is designed to resist atmospheric contamination resulting from nuclear explosions. Upon occurrence of contamination, air filter is automatically changed, providing constant source of filtered air. Purpose of building is to furnish central control of all fire alarms in city. Whether received by telephone or fire-alarm box, alarms are promptly re-transmitted to proper fire station.

Oahu Cemetery to Lie Between Mountains, Ocean

Administration building designed by Wimberly & Cook Architects, Ltd., of Honolulu, for Hawaiian Memorial Park, has concrete folded-plate roof

and is surrounded by concrete-tile grills. Building includes "Family Room" with adjoining garden, administrative areas, complete kitchen, and "large sales conference room which the cemetery is offering to windward [side of island] organizations for nighttime meetings." Music-control system pipes eight hours of recorded religious music throughout grounds. A reflecting pool before the administration building will be the feature of landscaping; chapel and crematorium are next elements in plan.

Branch Library to Double As Community Center

West Fullerton, Calif., branch library will be one of few on West Coast to be entirely financed by private industry. Hunt Foods and Industries Foundation is the generous donor.

Designed by William L. Pereira & Associates, library also will act as cultural and community center. The 10,000-sq-ft building will contain a multipurpose meeting room and auditorium accommodating 125 people, music room for live or recorded performances, lounge where rare editions and other collections may be shown, patios for outdoor reading and relaxation, and provision of gallery panels on many interior walls for showing of art exhibits. A clerestory window around entire perimeter of structure will admit natural light. Narrow embrasures jewelled with stained glass will highlight the façade; through these sunlight will filter to the interior during the day, and at night interior illumination will cast colored light to outside.

Pan-Pacific Award Won by Australian Firm

Second winner of Pan-Pacific Architectural Citation for "work of exceptional merit in the Pacific area" (Japanese Kenzo Tange was first, 1957), is Melbourne, Australia, firm of Grounds, Romberg & Boyd. Award was established by Hawaii Chapter, AIA, to honor and encourage fine

Continued on page 80

New locking service for commercial buildings

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- FLEXIBILITY IN DECIDING KEYING ARRANGEMENTS
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Masterkeys never issued during construction

Since only temporary cylinders are used on the job, masterkeys are not needed. Keys are shipped with the permanent cylinders and installation is made under the supervision of the owner's representative, who keeps all keys under his control.

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Decisions on keying can be made at any time at the owner's convenience.
No possibility of accidental invasion of security. No masterkeys on job.
Installation of locks is speeded and simplified as contractor need select only proper functions from case stock.
No need to build a keyboard. Schlage shipping carton serves as temporary keyboard.

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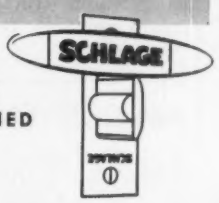
SECURITY INSTALLATION provides positive, easy-to-maintain security at every stage of building...and beyond

ADVANTAGES	OTHER SYSTEMS
	All detail on keying must be included in original factory order so the complete lock, with key, can be shipped.
	During construction masterkeys are used or permanent cylinders employing a form of temporary keying that still allows permanent keys on the job.
	Each lock must be itemized and laid out to find the exact lock for a specific door.
	Contractor must build a keyboard and tag all keys.

AMERICA'S MOST DISTINGUISHED LOCK BRAND



Shipping carton is a temporary key-filing cabinet

All cylinders are shipped complete with the key and packaged in a key-control envelope for storage and easy access until actually needed. No need to build a keyboard.

No problem of matching keys to locks

Permanent cylinders and keys are packed together and, when the cylinder is installed, the key is placed back in the file envelope and returned to the shipping container for easy identification and future incorporation into a key-control filing system.

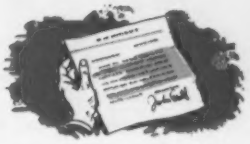
CONTINUING SECURITY

The unique Schlage PSI system has these features which assure the continued integrity of the building's security system:

Security in factory handling

The job name is omitted from factory orders; material handlers know the job by number only. Thus, there is no possibility of anyone retaining a masterkey for future invasion of security.

No unauthorized masterkeys made



Schlage will not issue masterkeys for any existing job without written authorization from the existing owners.

Continued control of keying system

The final decision on keying can be delayed an indefinite time, subject to the decisions of the occupant. When a tenant moves in and determines his keying requirements, cylinders will be shipped from the factory, untouched by construction personnel. Subsequent tenant changes can be handled in the same way.

SEE HOW SCHLAGE'S PSI CAN WORK ON YOUR BUILDING

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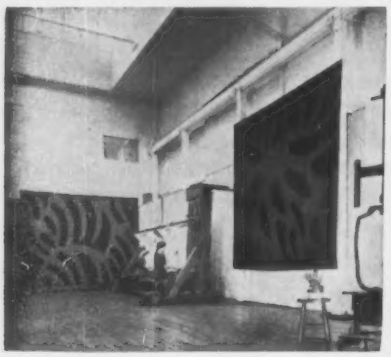
Continued from page 77

architecture in nations bordering the Pacific Basin. Roy Grounds, senior partner, will receive award in Honolulu, January 29. Other members of firm are Robin Boyd, well-known in U.S. through his writings and work at Massachusetts Institute of Tech-

nology, and China-born Frederick Romberg, who devotes part of his time to teaching at University of Melbourne. Shown here is an example of the firm's work, the noted Academy of Science Building at Canberra.

Contemporary Tapestries From Medieval Techniques

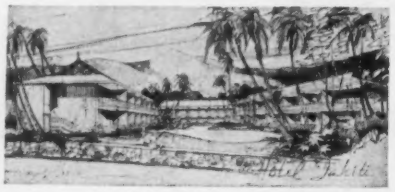
Designer-Weaver Jan Yoors is said to have the only complete tapestry weaving studio in this country. Yoors says that he considers it duty of creator of tapestries to have control from selection of wool and supervision of dyeing



through original design to complete weaving. The functions of both artist and craftsman are thus integrated in the medieval tradition, according to Yoors. Tapestries are woven on an 18-ft-high warp loom from full-scale designs traced from the paper originals.

Tahiti Gets Ready for Tourist Invasion

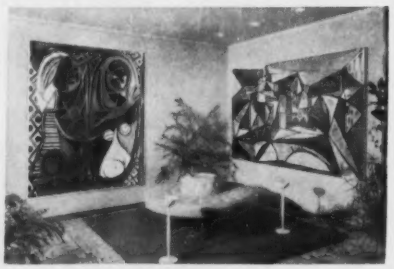
Second element of 44 "Polynesian cottages" is expected to join adjacent group of 18 (not shown) in time for anticipated direct air service to Papeete. Designed by Honolulu firm of



Wimberly & Cook Architects, Ltd., group is said to recall design of vanilla-plantation managers' homes of earlier colonial days. Unfortunately, P/A could not contact Paul Gauguin to see what he thinks of all this.

Picasso Phantasmagoria in New York Apartment Lobby

Four works by Picasso have been reproduced in different materials—with the Master's permission—to embellish the lobby of "The Picasso," a New York luxury apartment house. "Girl in Front of a Mirror" was reproduced in backlighted stained glass by Frederick L. Leuchs, who also rendered "Figures" in black on white carrara glass background. "The Studio" was woven as tapestry by Edward Fields, Inc., and "View of Paris with Notre Dame" was recreated as a ceramic mural by Gertrude and



Frank Wallace. Albert Lefcourte did the interior decoration for Dworman Associates, builders and owners of the building. Picasso was invited to attend the unveiling of the mutations. He did not show up. On the Boards: "The Van Gogh."

Meetings, Conferences

Conference on school fire safety has been scheduled by National Fire Protection Association at Hotel Manhattan, New York, January 22; John C. Thornton, chairman of AIA Committee on Human Safety, will be one of six speakers . . . . Illuminating Engineering Society, New York section, will hold 1960 Office Building Lighting Symposium in New York, January 28 . . . . "Session '60" dealing with exploration of ideals and contemporary approaches to architectural practice will be held in Banff, Alberta, Canada, February 21-27. Co-sponsored by Alberta Association of Architects and extension department of University of Alberta, conference will have as keynote speaker MIT's John Ely Burchard . . . . "Church Art Today," a juried exhibition of contemporary ecclesiastical arts, will be at Grace Cathedral in San Francisco, April 3-May 1; those attending AIA Convention will wish to go. Architects and artists wishing to enter must do so before March 7. Write: Church Art Today, 1051 Taylor St., San Francisco 8, Calif.

Frozen-Earth Method Used To Sink New York Shaft

When City of New York Department of Public Works was confronted with the problem of sinking a shaft for pollution control on Manhattan to connect with a large control project, it was discovered that marshy sub-surface conditions made customary methods inadvisable, because of peril to footings of surrounding buildings. After several experiments, it was decided to freeze the earth in which the shaft was to be sunk, and to drill the hole out of this solidified soil. Twenty-one freeze holes 123 ft deep were drilled in a 26'-6" circle. Freeze pipes consisting of a six in. outside pipe closed at the end and a two in. inside pipe open at the end were installed in the holes and connected to the supply and return manifold. Brine-supply lines of eight-in. diameter conducted brine from refrigerating plants to pipes. A hole was drilled in the center of the shaft to provide a check on progress of the freezing. To accomplish freezing in 60 days, two 55-ton-capacity ammonia-brine-cooling systems designed by York Corporation were used alternately. Units were mounted on structural-steel bases, and are resaleable for use in freezing skating rinks.

AIA CONVENTION

J. Robert Oppenheimer, director of Princeton Institute of Advanced Studies, and Cyril Northcote Parkin-

Continued on page 82

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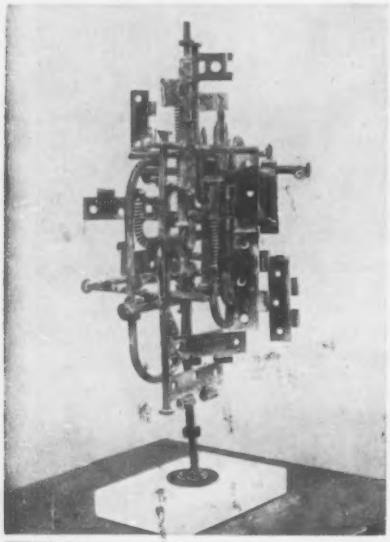
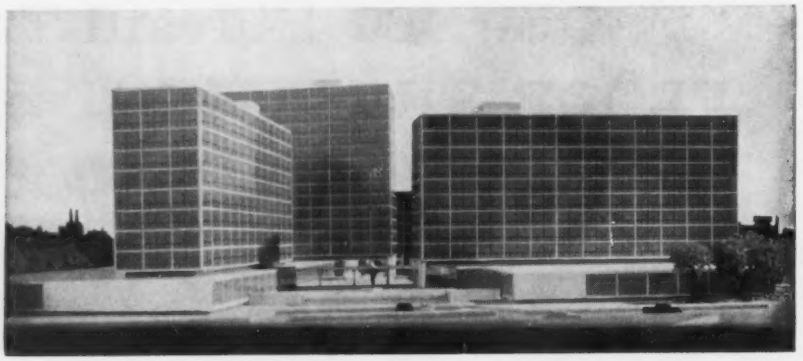
Continued from page 80

son, historian and author of *Parkinson's Law*, will be the featured speakers at the AIA Convention in San Francisco, April 18-22. Theme of the convention is "Expanding Horizons," and to the views of the scientist and historian will be added those of Harvard Philosopher Morton Gabriel White and Sociologist Wendell Bell of the University of California. Convention headquarters will be at the Mark Hopkins, and meetings will take place in the nearby Masonic Temple.

Hardware Used as Basis For Inventive Sculpture

Nails, hinges, nuts and bolts, screws, and piping were used by Sculptor Joseph Konzal for the imaginative pieces in his recent show at New York's Bertha Schaefer Gallery. Forms created from such everyday materials are spidery, humorous, and dignified by turn. Shown here are "Essays in Nails" Numbers 5 and 7. Next time you are on the job site, pick up a few odds and ends to work with—you may be exhibiting on 57th Street yet!





MIT, Developer Combine On Industrial Center

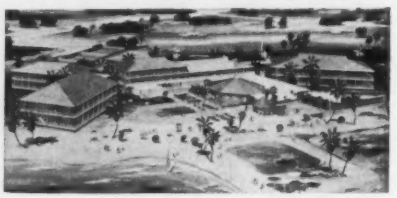
Massachusetts Institute of Technology and the Boston development firm of Cabot, Cabot & Forbes Company will collaborate on the design, construction, and renting of a $15,000,000 industrial research center to be adjacent to the MIT campus. Plans are for four tall buildings—one the tallest in Cambridge—which be leased to industries for laboratory, office, research, and technical shop facilities. Plazas, courtyards, restaurants, and parking provisions for more than 1000 cars will be part of the center. The Institute does not plan to use the center for any academic purposes. Cabot, Cabot & Forbes Associates, Inc., the architectural and engineering department of the developer, will produce the designs, with faculty of MIT School of Architecture and Planning advising.

Scholarships, Fellowships And Prizes

University of Michigan announces six fellowships and a graduate scholarship; applications, available from Chairman, Department of Architecture, University of Michigan, Ann Arbor, Mich., must be completed and returned by April 1 . . . . LeBrun Traveling Scholarship for 1960 has as its competition subject design of a heliport. Applicants must be U.S. citizens, between 23 and 30, with at least 1½ years office experience, no previous traveling scholarship, and must be recommended by corporate member of AIA. Write: Chairman, LeBrun Committee, New York Chapter, AIA, 115 East 40 St., New York 16, N.Y., for information.

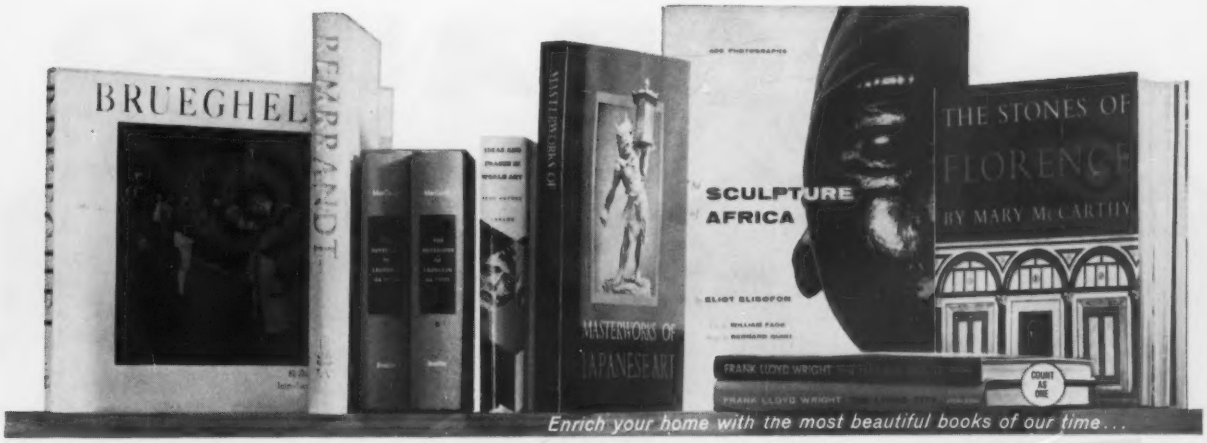
Florida Keys to Get New Luxury Hotel

Hotel with an exterior of unusual restraint has been designed by Morris Lapidus, Kornblath, Harle & Liebman for Duck Key, Fla. Design theme of hotel is the West Indies, and West Indian plantation atmosphere has been sought in deep-roofed, galleried exterior. In addition to 100 guest units, hotel will have restaurant and cocktail lounge, golf course, two swimming pools, tennis courts, solaria, gymnasium, steam and massage rooms.



"Hypo" to House West Coast Electronics Plant

Wood-and-steel hyperbolic paraboloid designed by Engineer Raymond O. Feichtmeir will be built for Pederson Electronics in Lafayette, Calif. First of four such structures, the "hypo" was designed by Feichtmeir while a graduate student at University of California. He says that testing equipment at University will be used to check stresses on 27-sq-ft model.



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Continuing Strong Economy Seen for 1960

Signs Are, Construction Will Lead Rise

This year will be a good one for the construction industry.

It will see a dollar volume of perhaps $56 billions (not counting maintenance and repair), *vs.* an estimated $54 billions for 1959.

You have to take that position (with one major qualification) after looking over the prospects and predictions that come flooding out of Washington and financial centers throughout the country at this time of year. The qualification: That there will be no major, long-lasting strike during the remainder of the year.

The evidence is on the side of a continuing strong economy, and with it, a strong year for anyone concerned with construction.

- Item: If you dig deep enough into the budget that the President presented to Congress in mid-January, you'll find something like $7 billions for construction tucked into it, not counting military housing.
- Item: Congress is in no mood to reduce the Administration's proposals. In this political year, the tendency will be to increase spending, if possible.
- Item: Continuing construction expenditures by state, county and municipal governments seem to be in the cards. There's strong evidence of support for bonds. And the demand for classroom space—as one example—is so far ahead of supply that many agencies are advocating almost desperate efforts to catch up.
- Item: Major construction industry sources, with a couple of exceptions, look for a better year, a record-toppling year in fact. More conservative observers, like U. S. Department of Commerce and some banking and investment groups, also look for rises in dollar volume.
- Item: Nearly every economist looks for great expansion in spending for new plant and equipment. An example is the chemical industry, recently urged by one of its leaders to top its own $1.8 billions construction record.

Housing, Credit Viewed

Points of disagreement among all the surveys and predictions now available center around housing and credit. Both of these items, again, are inextricably tied up with political considerations. And there's a third imponderable: There is no accurate measure of expenditures for maintenance and repair.

There's no agreement on what will happen to housing. Two important groups think it will decline, largely because of tight money; three others think it will at least hold steady.

On the pessimistic side are National Association of Home Builders and the usually knowledgeable Value Line Investment Survey. NAHB thinks housing starts will decline 10 to 12 percent from 1959's estimated near-record of 1,350,000. The Value Line puts the decline slightly higher—at 15 percent.

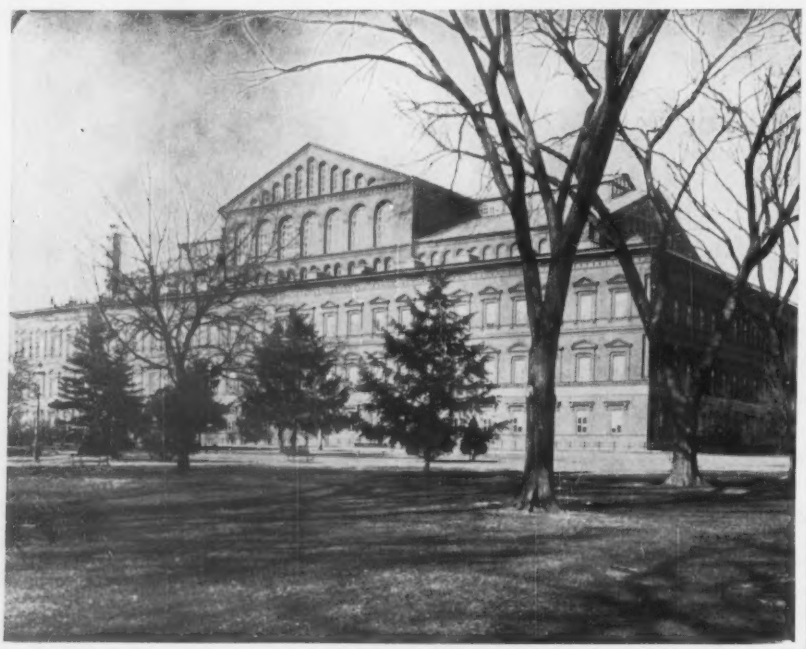
But National Association of Real Estate Boards reports that housing demand continues strong, and expects it to continue, with emphasis on more expensive units with more bathrooms, fancier kitchens and the like. FHA officials in public declarations have tended to support NAHB's pleas for easing of credit, but if you talk to them privately, they seem to believe that the market will hold steady in any case. Associated General Contractors—most optimistic of all, with its predictions of a $3 billions rise for 1960—apparently isn't at all worried about the housing situation (of course, most of AGC's members are concerned with other types of construction).

NAHB and The Value Line both base their predictions of a decline on lack of money, higher interest rates, which they believe will affect the two heaviest ends of housing business—low-priced and high-priced housing. NAHB's directors presented to the membership at mid-January meetings a series of recommendations to ease this situation, ranging from establishment of a central mortgage bank to a special cabinet-status Department of Housing and directives to the Federal Reserve Board to ease its policies.

As usual in Washington, the question of financing comes back to political viewpoints. The Administration (with that part of the Republican party that follows it) seems prepared to stick to its belief that the best way to control inflation is to leave Federal Reserve Board free to make its own policies, to hold down Government spending, maintain a general hands-off policy as to controls of business, interest rates, and the like. The Democrats, in general, feel that an unfair burden thus is being placed on those who need credit most, and that Government is duty-bound to help by whatever means are available.

Keeping in Shape

As to maintenance and repair, nearly everyone who attempts to make statistical pictures of the construction industry has made some sort of a stab at estimating this admittedly major item. So far, nobody has succeeded in coming up with more than a supportable guess.



Pension Building may become "vault" for U. S. military records (p. 89).

Continued on page 88

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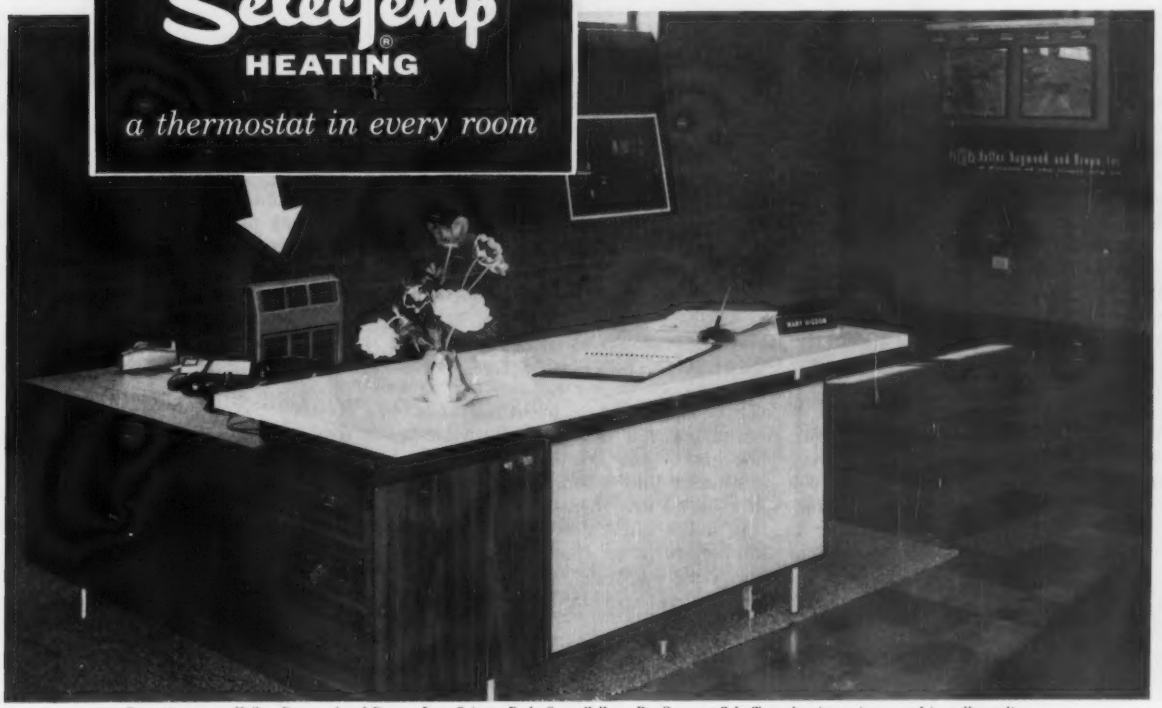

Reception room, Haller, Raymond and Brown, Inc., Science Park, State College, Pa. Compact SelecTemp heating unit recessed in wall supplies as much heat as a big radiator, plus room-by-room temperature control and constant circulation of filtered warm air. No electric wiring required.

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Washington News

Continued from page 86

Census Bureau—which took over some of the functions of Bureau of Labor Statistics in this field—is going to make another try. It has prepared lengthy forms for householders (including renters) to fill out this year, to include cost and materials used in all home repairs including "do it yourself" projects. However, results won't be ready before the end of the year, if then.

Meanwhile, the most optimistic available guess is AGC's. It figures that maintenance and repair costs totalled $19 billions in 1959, will reach $20 billions in 1960.

Industrial Upsurge

As to the over-all picture, however, there's no disagreement among the experts on one point: there will be a great upsurge in industrial construction.

National Planning Association, for instance, predicts a general rise of about $10 billions in the nation's economy—of which $3.5 billions will go toward new plant and equipment for industry. Speakers at a recent session of American Economics Association and American Statistical Association looked for a $30 billions increase in gross national product (now estimated at $480 billions), spurred by a "great upsurge" in family formation, and resultant increases in demand for consumer goods and services.

The chemical industry was urged to push construction of new plants, particularly in the field of plastics; aluminum producers, looking at a record year for 1959 (estimated production over 1,950,000 short tons) expect an even bigger 1960. Settlement of the steel strike points to great activity in that area; filling vast back orders and trying to meet new demands.

Statistics Not Sensitive

There's one more point to keep in mind, as you consider all these predictions: the Government-produced statistics on which many forecasts are based are themselves *well behind* the dates for which they are posted; and more often than not represent a "moving average," or "smoothed-out curve," rather than actual month-to-month facts.

Statistics on construction put-in-place and new housing starts, for example, are now running about three weeks behind (thus you see figures for December near the end of January). Other statistics, such as mortgages, may run a month or more behind.

And the methods of reporting—partly because of lack of funds—are such that statisticians must apply formulas to them, in order to come up with anything approaching the true situation. Thus the figures are subject to frequent adjustment.

That's one reason that Census in 1959 tried an experiment using aerial-mapping techniques to see if it would produce a more accurate and up to date method of keeping up with construction starts. The Bureau is planning additional flights this year, to check results of the first trials.

Digging into Capital

While the eyes of the construction world were trained on Washington over matters of the budget and of federal spending, there were some local developments of interest to architects particularly.

One of these was a proposal for a new lease on life for one of the city's most beloved monstrosities, the garish, red-brick Pension Building at 5th and F Streets, N.W., which has recently been housing a Civil Service

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Commission branch. Built in 1883, from a design by Gen. Montgomery C. Meigs, the structure features a 3-ft high frieze that completely surrounds the first story, depicting Civil War wounded. The structure has been proposed as a repository for permanent military records from the Revolutionary War onward, clearing space now occupied in the main Archives Building.

In another development, Capitol Architect J. George Stewart (an engineer) revealed that part of the current refurbishing of the Capitol will include installation of low voltage, high-frequency impulse wires around the dome and other areas, to discourage the great flocks of black starlings that have made their homes in the building's ornate stonework, ever since they were evicted from many office and Governmental buildings by similar devices. First step will be a survey of popular roosting spots. (Incidentally, GSA has just completed a survey of Washington's starling population—puts the total at 100,000 birds.)

Washington Cathedral started on another five-year construction program, the first phase to cost $1.8 million, for completion of the South Transept (overlooking the city), and for raising the partially completed tower on that side to a level slightly

over the peak of the apse roof. George A. Fuller Co., New York, will start construction in April, after delivery of limestone blocks from Indiana. Next step will be continuation of construction on the nave.

City-planning groups hailed a move by Baltimore and Washington regional planning agencies for collaboration in planning mutual long-term development. Both cities foresee massive headaches from an already inadequate transportation system, if "sprawl" is permitted to develop without planning.

Motor traffic on 12th Street faced a two-year detour, as District Highway Department started work on a tunnel that will carry the heavily used thoroughfare under The Mall. It is the first move in a plan that will see all cross-streets put underground, so that The Mall regains its originally-planned status as an unbroken carpet of green between Capitol and Washington Monument.

Communication Concerns

Three current studies under the aegis of National Science Foundation are of special interest to architects and those of scientific pursuits, who face the problem of communication research discoveries and ideas.

1. A one-year study by the Academy itself into the use of motion pictures for recording experimental phenomena and for communicating scientific research results among scientists;
2. A survey to determine the disposition of research information that's presented orally at scientific meetings, to indicate the quantity of such material which is eventually published, and possibly to show methods of improving dissemination of this type of information;
3. A feasibility study of editorial-business office operations, looking toward reducing the costs of journal publications for small (2000 to 3000) circulation lists. *E. E. Halmos, Jr.*

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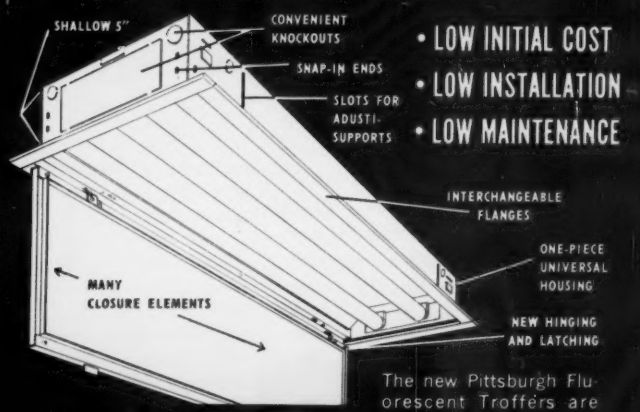

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The new Pittsburgh Fluorescent Troffers are shipped fully assembled and completely wired for immediate installation. All major components—troffer, closure, flanges—are interchangeable. Exclusive Adjusti-supports assure snug alignment in any ceiling. All metal parts are prefinished by Bonderite process. Easy to clean, easy to re-lamp.

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OVERALL EFFICIENCY WITH PRISMATIC CLOSURE

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VINYL WALL BASE

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Now . . . KenCove costs no more than rubber base! Inside and outside corners can be formed on the job, saving dollars. (Factory molded corners also available — see below.) Matte finish hides wall irregularities. Takes hard usage, resists marring. Call your Kentile Representative or see Sweet's File.

FACTORY MOLDED CORNERS: 4″ and 6″ high for outside corners; 4″ high only for inside.

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Myriad Effects Possible with Sculptured Blocks

Modular Units for Curtain Walls Available in Color

Luncheon meetings of Pittsburgh Corning's design staff with prominent architects in New York and Chicago laid the groundwork for four patterns of the newly-introduced three-dimensional, sculptured-glass curtain-wall units. Hollow blocks—12 in. sq and four in. thick—have pattern pressed into both faces. When color is desired, it is fired to outer face, leaving inner face clear. Trade name is "Sculptured Glass Module."

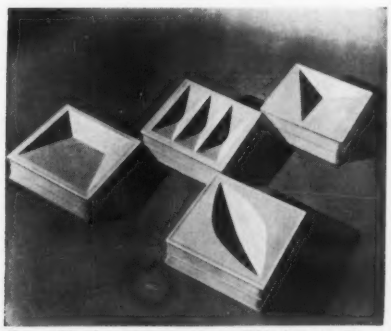
First patterns available are "Leaf," "Pyramid," "Harlequin," and "Wedge." All patterns may be ordered in clear glass or in any of twelve fired-on ceramic colors: black, white, deep red, deep blue, deep green, walnut, yellow, charcoal gray, coral, pastel blue, pastel green, and orange.

Units may be used in many variations within individual patterns, and many *more* when more than one pattern is used. Even greater variety may be achieved through intermingling of clear and colored blocks, and differently colored blocks.

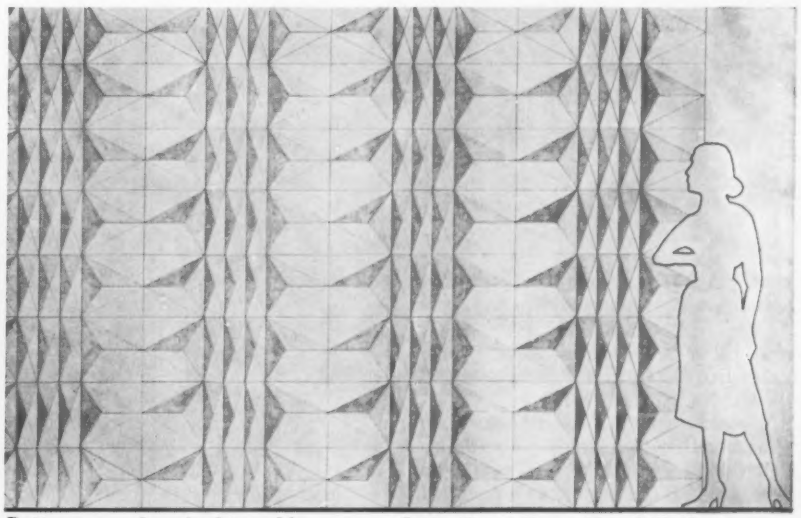
According to P-C, Sculptured Glass Module shares with conventional glass block "the distinction of being the only substantial wall material [with] both light transmission and insulation value." Module insulates against both heat loss and sound. Average sound reduction factor is 38 decibels. Four-in.-thick wall of units has same thermal insulating qualities as eight-in.-thick masonry wall. Unit permits diffused light to enter, and at night transmits interior light, providing a colorful appearance. Pittsburgh Corning Corporation.

On Free Data Card, Circle **100**

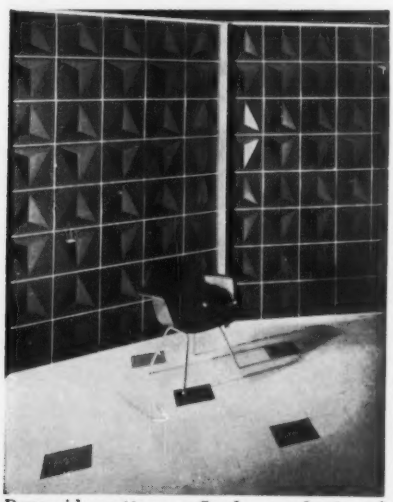
Mock-up installation of Wedge pattern used with 4x12 colored glass block.



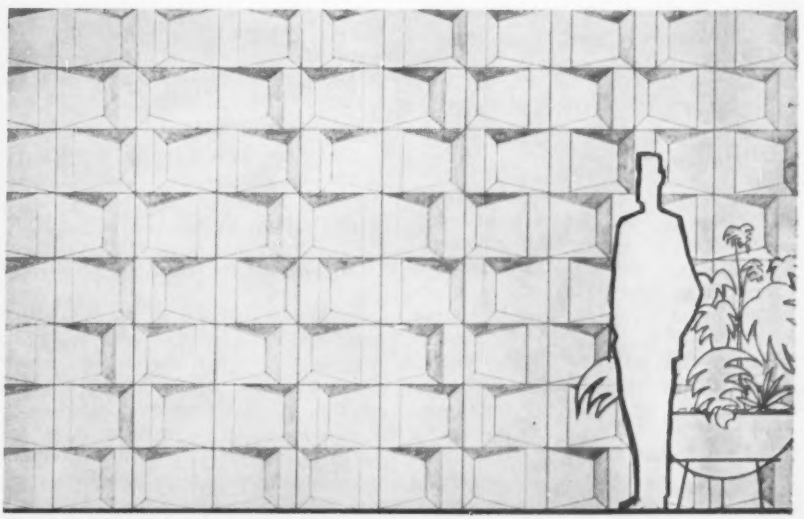
Four block patterns are "Wedge," "Harlequin," "Pyramid," and "Leaf."



Patterns may be mixed to achieve many effects. Here: Pyramid and Harlequin.



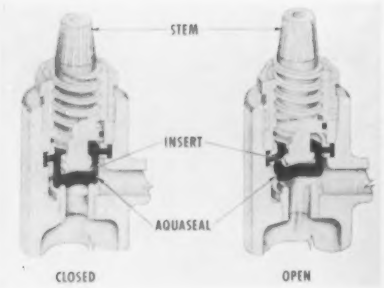
Pyramid pattern affords emphasis of architectural light and shadow.



Use of sculptured units with modular glass blocks provides interest.

Revolutionary Faucet Is Washerless and Dripless

New faucet valve, utilizing diaphragm principle of water control, eliminates conventional seat washers, and—with them—all leaks and dripping. Non-rotating valve is merely compressed against seat, with no friction involved, for water closure. Further important advantage of "Aquaseal" is



that particles of rust and scale are dislodged by water flow when valve is opened.

Another new product, to be incorporated in all future water-closet production, is "Tank Trim," a flush valve having no complicated linkages, and thus ending problems of running toilets and level jiggling. Tests equivalent to 20 years of use showed almost no sign of wear on the synthetic rubber-resin fitting. Plumbing & Heating Division, American-Standard.

On Free Data Card, Circle **101**

Brick Treatment Reduces Staining, Efflorescence

Chemical treatment for brick reduces absorption and suction rate, and preserves original appearance in several ways: by reducing staining (from dirt carried into brick when water is absorbed) and by reducing efflorescence (from dissolved salts carried to the surface when absorbed water evaporates). With suction rate lowered to an optimum level, normally high-suction brick is also easier to lay—brick need not be wet before laying, mortar can be spread over longer distances at a time, and more courses can be laid before joints must be struck. Strength tests show that treatment improves brick-to-mortar bond. "Silaneal" solution is applied by dipping or spraying brick as it comes from kiln; it dries to a colorless, odorless coating. Dow Corning Corporation.

On Free Data Card, Circle **102**

Direct-to-Steel Material Fireproofs in One Coat

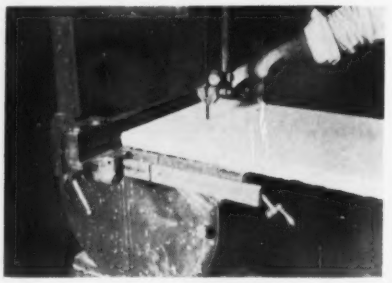
"Mono-Kote" is an improved direct-to-steel fireproofing material that can be applied in any thickness in one application. It is a lightweight coating primarily designed to provide fire protection, but also has rust-inhibitive advantages and insulative and sound

absorptive qualities. Cost savings derive from the single application, which speeds up following trades, and the elimination of lathing. Material is premixed, requiring only addition of water, is non-toxic in its application stage, and sets to become a tough hard surface without fissuring or shrinking. Zonolite Company.

On Free Data Card, Circle **103**

Inorganic Wall Board Now Completely Incombustible

Intended for structural and insulating applications, "Unarcoboard" is 100% incombustible and suited for walls, ceilings, partitions, backing for brick or tile facing, duct work, firewalls, heat screens, etc. According to manufacturer, the new board is ideal as an exposed surface where both insulation and sound-deadening properties are required. The white board can be worked

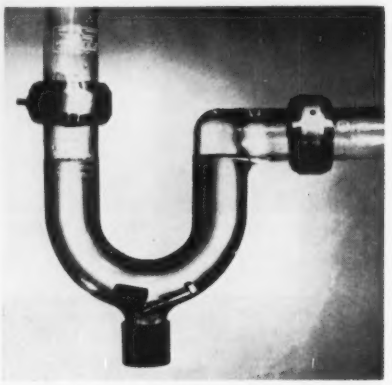


and nailed like wood (planed to .001″ accuracy) and is available in sheets sized up to 4′ x 8′. Finishing is not necessary, but laminates, veneers, or paint can be applied if desired. Fibrous Products Division, Union Asbestos & Rubber Company.

On Free Data Card, Circle **104**

Drainline Has New One-Piece Couplings

One of 30 fittings available with new "Pyrex Brand Lifetime Drainline System," drainline P trap has plastic cap with "Teflon" liner which can be removed like a bottle cap for cleaning. Items lost down the drain can be quickly spotted and easily removed. System features new one-piece couplings for making quick, permanent



compression joints. Piping and fittings are made of hard, low-expansion borosilicate glass for resistance to virtually all corrosives. Manufacturer guarantees line against joint leakage or corrosion for lifetime of building. Corning Glass Works.

On Free Data Card, Circle **105**

Jet Flame Shapes Stone

Rocket-jet principles are applied to small manual torch that carves and shapes stone with unbelievable ease and economy. Working best on hardest stones, "Oxweld FSJ-6 Torch" can model delicate sculptures and

shape slabs as thin as 5/8", as well as perform heavier work shown above (cutting 1' from supporting piers of Queensborough Bridge in New York to widen deck by two lanes). Torch burns oxygen and kerosene in an internal, water-cooled, rocket chamber, with resulting flame emitted at 7000

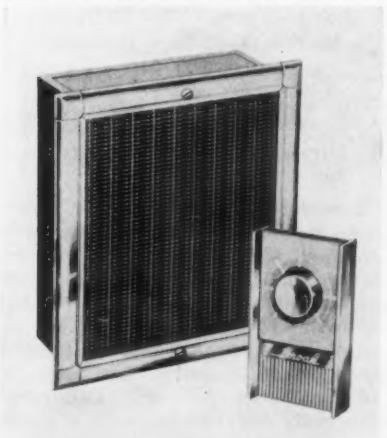
fps and 5000 F. Cooling water, discharged from front end of burner, serves to protect adjacent stone from spalling and prevent stone from cracking through overheating. Linde Company Division, Union Carbide Corporation.

On Free Data Card, Circle **106**

Wall Thermostat Teams With Electric Heater

Claiming to be the first wall thermostat teamed with an electric wall heater, this sensitive unit is fully exposed to room-air temperature and responds to ½-degree changes in temperature. Heater operation is instantaneous, with heat felt within 10 seconds of switch-on. Broan Manufacturing Company.

On Free Data Card, Circle **107**



Plywood Components Used In Demonstration House

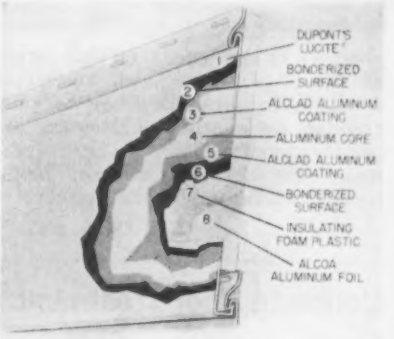
Specially-designed "cathedral" box beams are roof supports for the living wing of a research-demonstration house built at Champaign, Illinois. Purpose of the house is to show economy of combining several new plywood components with standard "Lu-Re-Co" wall panels and trusses. For cost comparison, each zone of house utilizes a different framing method, including plywood box beams, stressed-skin panels, rigid frames, and panelized floor system. With familiarity, construction could take ½ the time of conventional framing.

Living-room beams have walnut-printed, overlaid, fir-plywood webs, thus providing a shop-prefabricated beam which is put into place without additional finishing. For ease in handling, beams were fabricated in longitudinal halves, then spliced at the site by plywood cover plates nailed to top and bottom flanges. House was designed by Laurence S. Higgins, architect, and sponsored by DFPA, Lumber Dealers Research Council, and Plywood Fabricators Service. Douglas Fir Plywood Association.

On Free Data Card, Circle **108**

Aluminum Siding Has High Insulating Quality

New 8" aluminum siding is the first product of its kind incorporating both mass and reflective insulation. Layer construction consists of aluminum sheet, backed by foamed plastic (for stiffener and insulator), and by aluminum foil (for reflective insulator and additional strengther). Finished with new permanent baked enamel, "Alcoa Siding" reduces maintenance costs remarkably, as it does heating costs. Exclusive drip-design guides rain water directly to the ground and prevents panel-to-panel streaking. Also featured are hidden vent holes which safeguard sheathing against rotting and warping by allowing trapped condensation to escape. Interlocking panels insure a weathertight seal, while concealing nailheads. Any type of surface—wood, stucco, shingle, and concrete—can be covered.



Although Alcoa aluminum is used

Continued on page 96

Continued from page 95

in the manufacture of many sidings by independent concerns, the new product is the only one fabricated by Alcoa. Distribution will be by Barrett Division, Allied Chemical Corp.; Bird & Son, Inc.; Flintkote Co.; Mastic Corp.; and Philip Carey Manufacturing Co.—the most extensive distribution for aluminum residential siding ever planned. Aluminum Company of America.

On Free Data Card, Circle **109**

Window Blind Integrates Uses of Blind, Drapery

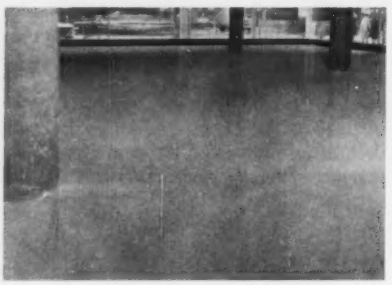
Revolutionary traversing window covering combines functions of blinds and draperies in a single device. Basic component is 3″ square of polystyrene, molded in three-dimensional pattern. When assembled, individual squares interlock on steel rods and are suspended on nylon rollers from heavy-duty drapery track. Blind is semi-translucent, offering privacy and softly-diffused light, without heat or glare. A decorative effect of subtle

shadows is created by molded forms of the 3″ squares. Small horizontal vents in squares allow air to pass through for ventilation. Modular assembly permits blinds to be custom-made for any size window. Jaylis Sales Corporation.

On Free Data Card, Circle **110**

Concrete Floor Treatment Cures, Hardens, Seals

Curing compound for newly-poured concrete floors also hardens, seals, and dustproofs in a single application. The excellence of "Dekote" as a curing membrane is assured by its fast-drying properties and its ability to retain over 95% of moisture. Ability to seal against acid, oil, and grease is a helpful factor in preventing expensive cleaning after work of other trades. Unlike conventional curing membranes, Dekote does not need to be removed before application of floor surfacing. A clear liquid, it can be applied by spray, roller, or brush. Tretol, Inc.



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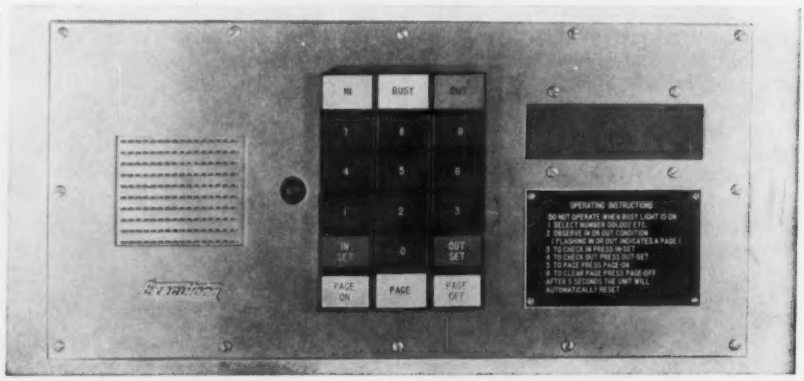

Communication Systems For Doctors and Nurses

Among new developments in electronic communication for hospitals, schools, etc., is new "Audio-Visual In-Out Register," which combines two-way intercom and visual register in a single compact automatic system. Capable of registering up to 1000 persons, it is particularly useful in hospitals to determine whether staff members are available and to deliver messages to them as they enter or leave building.

Another product, "Audio-Visual Nurse-Call System," combines electronic two-way intercom with visual bedside signaling. Many special features are incorporated, such as segregation of calls to get proper response, and provision of special devices to suit any patient disability. Auxiliary nurse panels are available for installation on long corridors. Executone, Inc.

On Free Data Card, Circle **112**

Rugged-Metal Wall Panel As Acoustical Partition

Heavy-duty-metal wall panel is for use as interior partition where noise reduction is required. Perforated on one side, prefabricated panel has a sound-absorbing element between its two metal surfaces, giving noise-reduction coefficient as high as .90. Rugged construction suggests use in schools, industrial plants, commercial establishments, and research facilities. Sections are 2″ or 3″ thick, 2′ wide.

Building Products Division, R. C. Mahon Company.

On Free Data Card, Circle **113**

Two Movable-Wall Systems Are Introduced

"Signature" and "Delineator" movable wall systems feature admirable slimness—2¼″ thick. Signature is designed to meet needs of broad commercial and industrial market. It has a four-way post system which, according to company, "makes it easier than before to use movable walls for efficient space division." Delineator, especially designed for needs of archi-

Continued on page 100

Better handling quality is one reason Perma-Bak cuts costs. Sheets go into place quickly, easily.

With Perma-Bak, the tile setter can see what he is doing. Chance of error is greatly reduced.

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for Ceramic Mosaics

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American Olean Perma-Bak tile is a development of special interest to architects—offering as it does substantial savings on unglazed tile installations, especially on long corridors and in large areas.

In some instances, tile contractors have reported labor savings of more than 50% on such jobs.

Perma-Bak can be used to advantage with any accepted setting method—conventional mortar, mastic or the new thin-set mortars. It is available in full-size sheets in both the 1$\frac{9}{16}$"-$\frac{3}{4}$" and the 2$\frac{3}{16}$"-1$\frac{1}{16}$" series. Plan to use it on your next job.

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4. It goes up smoother! When set with adhesives, Perma-Bak cushions underbed irregularities—results in smoother surfaces.

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To assure a good design and to provide a good base for roofing felts—use Insulite Cant Strip. Ideal for eliminating sharp breaks in roofing felts where the flat deck meets with wall, chimney or other vertical surface. Sizes: 3″ x 3″ and 4″ x 4″.

Solve drainage and water runoff problems with Insulite Tapered Edge Strip. Used at outer edges of flat roofs, it carries felt smoothly over nailing members. 4 foot lengths, 12″ or 18″ wide. Tapers from 1⅝″ to ⅛″.

Solve more application problems with extra-strong Insulite Roof Insulation

Tapered Edge Strip and Cant Strip assure better, trouble-free roofs

Today, more than ever before, a sound, trouble-free roof requires insulation with high transverse and compressive strengths. These strength properties are needed to resist cracking, crushing and flexing due to on-the-job handling and roof traffic loads. Insulite Roof Insulation is vastly different from soft—or brittle—materials. It is made of *all-wood fibers*—slow-growing Northern wood, for strength and rigidity.

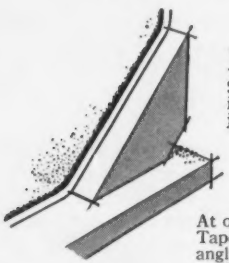
Insulite® Roof Insulation is available in two types: Ins-Lite® made of natural wood fibers; Graylite®, of the same basic material, but integrally impregnated with asphalt for greater strength and moisture resistance.

To meet certain troublesome roofing problems, Insulite offers a Tapered Edge Strip and a Cant Strip (illustrated and described below); both are made of the same basic wood fibers as Insulite Roof Insulation to eliminate any hazards caused by introducing another material with different properties.

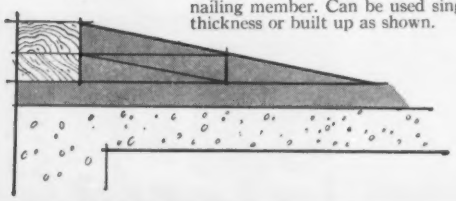
Insulite provides a uniform, durable and highly efficient insulation that takes rough on-the-job handling without breakage or crushing. It lays fast and uniformly, is easy to apply.

For complete specifications on Insulite Roof Insulation, Tapered Edge Strip and Cant Strip, just call your nearby Insulite representative; or send the coupon to Insulite.

Solve these special roofing problems with Insulite Tapered Edge and Cant Strip

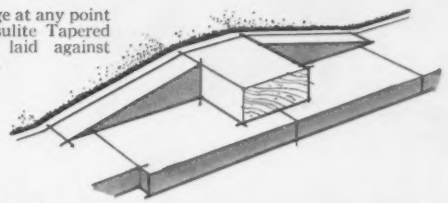


Where roof meets wall or other vertical surface, Insulite Cant Strip eliminates 90° break in roofing felts. Makes a well designed joint.

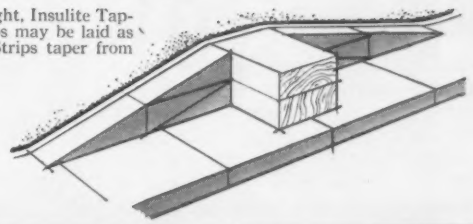


At outer edges of flat roofs, Insulite Tapered Edge Strip eliminates sharp angles, carries felt smoothly over nailing member. Can be used single thickness or built up as shown.

To channel drainage at any point on a flat roof, Insulite Tapered Edge Strips are laid against raised nailing base.



To build up height, Insulite Tapered Edge Strips may be laid as shown above. Strips taper from 1⅜" to ⅛".



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Continued from page 96

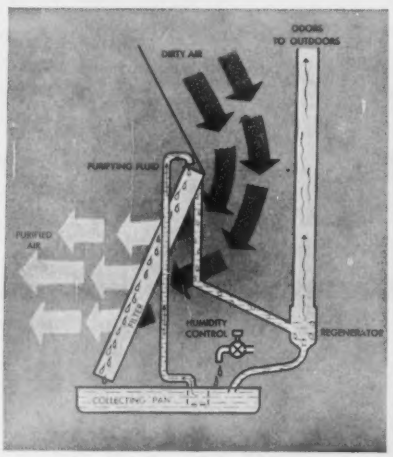
tect and designer, is available on 4″ module, from 2′ to 5′ in width. Recessed feature trim integrating various elements of system gives notably clean-lined look. New connection

methods and perimeter-sealing techniques give greater degree of sound control than many other panels, it is said. Delineator is designed to adapt to many wall-covering materials such as woods, cloths, vinyls, etc., and to combine easily with clear and translucent glass. E. F. Hauserman Company.

On Free Data Card, Circle 114

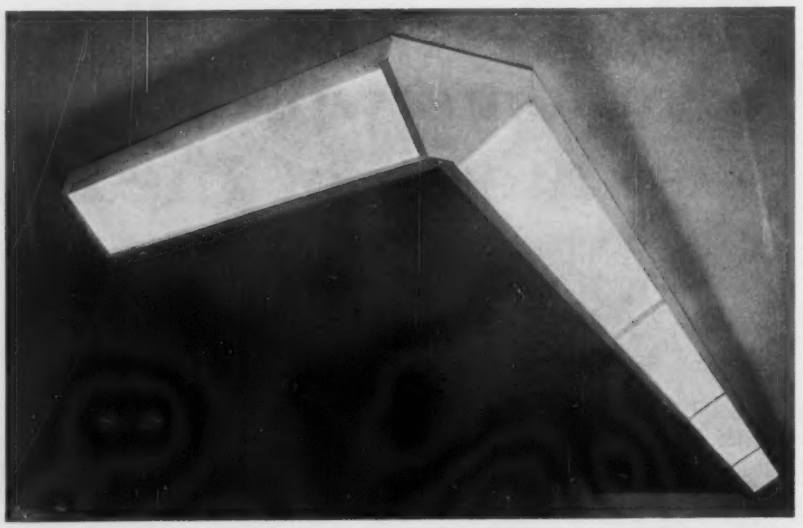
Purifier Removes Odors, Humidifies, Cleans Air

New development in air conditioning provides first practical and effective odor removal, winter humidification, and constant-efficiency air cleansing for the home. "Automatic Air Purifier" makes possible continuous 12-month control of quality, humidity, and purity of air. All fresh odors are absorbed, and even residual odors—absorbed by walls and furniture over the years—are gradually eliminated. Air is sent through filter element which is continually bathed with purifying fluid from collector pan at



bottom. Part of fluid is drained into regenerator where odors are removed and sent outdoors; minerals which might clog humidifying surface are precipitated. Effect is the same as airing out the house with fresh air every 40 minutes. Carrier Corporation.

On Free Data Card, Circle 115



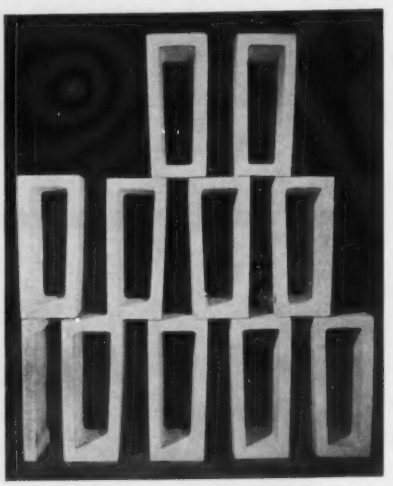
Guggenheim Lighting Fixtures Available

Basic unit devised for front lighting of paintings in Wright's Guggenheim Museum has been placed on market. Result of collaboration between manufacturer and museum director, James Johnson Sweeney (p. 83, NOVEMBER 1959 P/A), unit is 50″ long, 10″ wide, 8″ deep. It contains reflector which can be focussed to permit variation of 4′ in focal area to be lighted—at distance of 4′. Unit has interlocking system eliminating seams, overlaps, and end caps, permitting electrician to align entire luminaire with one measurement. Each section lends structural support to next. Photo shows six connected units lighting a cove at Guggenheim. American Lighting Corporation.

On Free Data Card, Circle 116

Concrete-Block Grills Are Versatile

Substantial-looking grill blocks of white cement with aggregate of marble chips are suitable for any number of indoor and outdoor uses. Blocks shown weigh 18 lbs apiece;



measure 5½″ at top, 6″ at bottom, 14″ high, 5″ deep. They may be reinforced with steel rods or mesh if desired. Arista Company.

On Free Data Card, Circle 117

LIFETIME TILE-LIKE WALL FINISH FOR CONCRETE BLOCK AND OTHER SURFACES

New

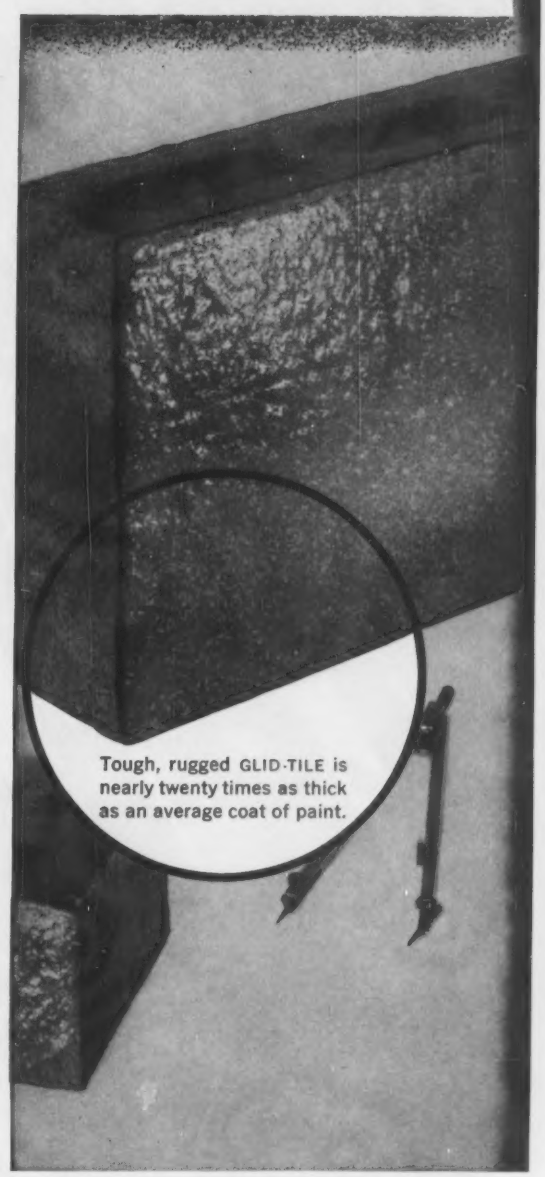
GLID-TILE

Easy to maintain, keep clean!

GLID-TILE is a special polyester resin spray finish. Far more than a paint, GLID-TILE *upgrades* concrete, wood, metal, plaster, wallboard and masonry block surfaces. It costs only a fraction of the usual glazed or ceramic tile. The average annual cost is extremely low, too, because GLID-TILE outlasts conventional paint coatings by many years.

GLID-TILE becomes an integral part of the wall surface, and cures to a continuous, non-porous finish. This thick, tough, tile-like coating resists acids, solvents, alkaline detergents and hot water, making it ideal for operations such as food processing plants where staining and corrosion must be eliminated. GLID-TILE also withstands hard usage, mechanical abuse, impact and abrasion. For example, one minute of strong sandblasting completely destroyed a baked enamel panel while in the same test, GLID-TILE showed *no change*. In another test, a sub-surface of concrete broke under heavy impact *before* the GLID-TILE finish could be destroyed.

For a lifetime wall finish that offers beauty, durability, easy maintenance and maximum cleanliness, specify GLID-TILE. Available in a wide range of modern colors for offices, classrooms, corridors, cafeterias, laboratories, washrooms, factory production areas.



Tough, rugged GLID-TILE is nearly twenty times as thick as an average coat of paint.

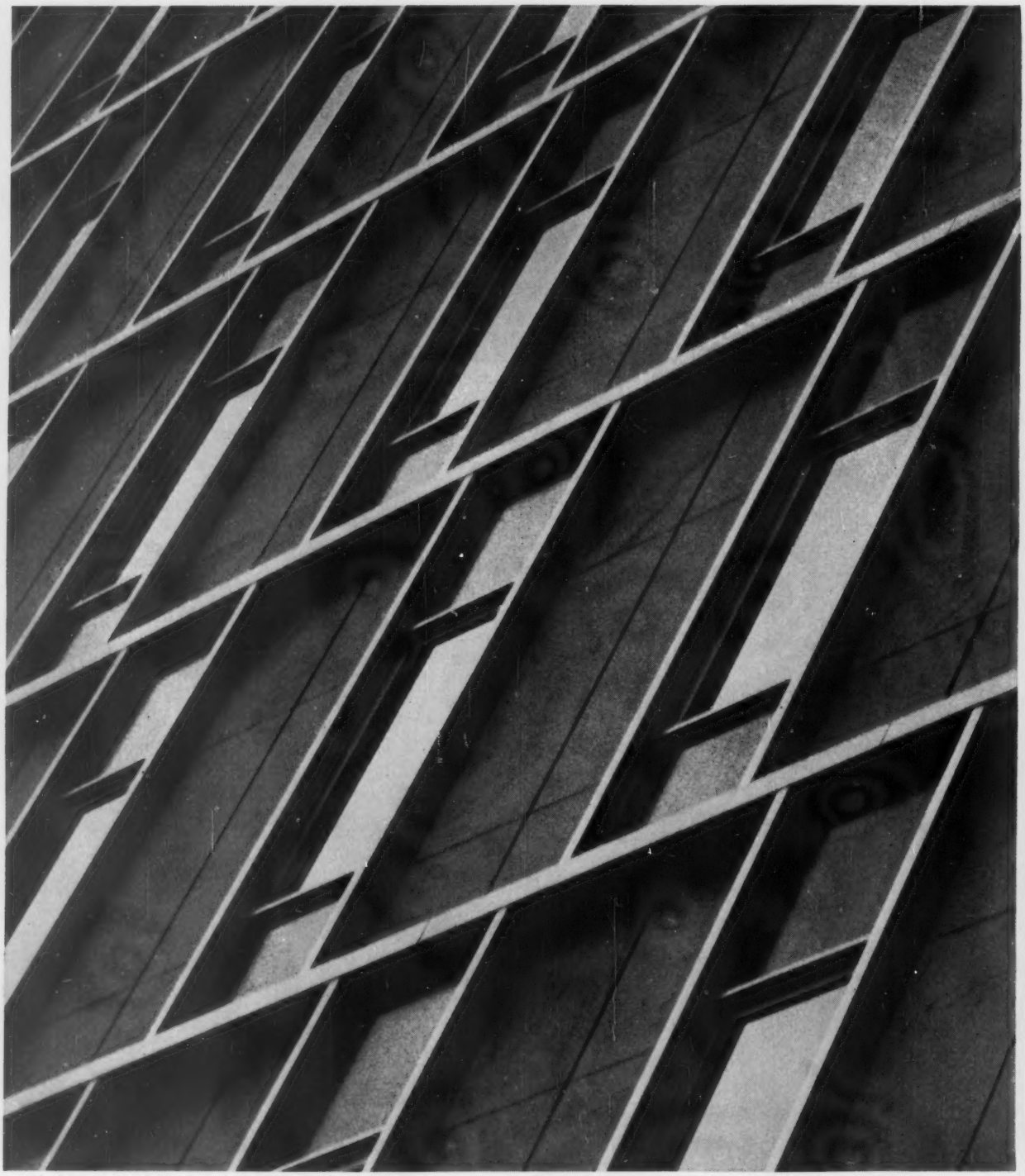
FOR FREE SPECIFICATION FOLDER AND THE NAME OF THE GLID-TILE APPLICATOR IN YOUR AREA, WRITE ON YOUR COMPANY LETTERHEAD.

QUALITY Glidden PRODUCTS

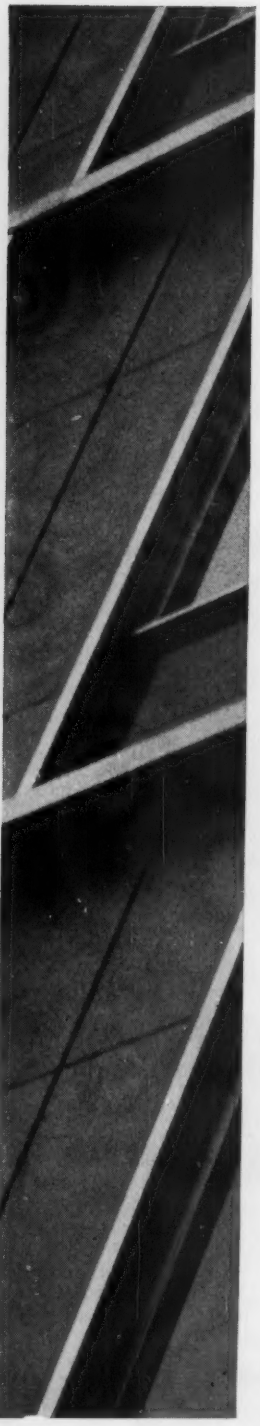
PROFESSIONAL FINISHES
The Glidden Company
MAINTENANCE FINISHES DIVISION
Dept. PA-260 • 900 Union Commerce Building
Cleveland 14, Ohio
In Canada: The Glidden Company, Ltd., Toronto, Ontario

For more information, turn to Reader Service card, circle No. 312

DOW | **BUILDING PRODUCTS**



NATIONAL BANK OF DETROIT. Architect: Albert Kahn Associated Architects and Engineers, Inc.; General Contractor: Bryant and Detwiler Company.



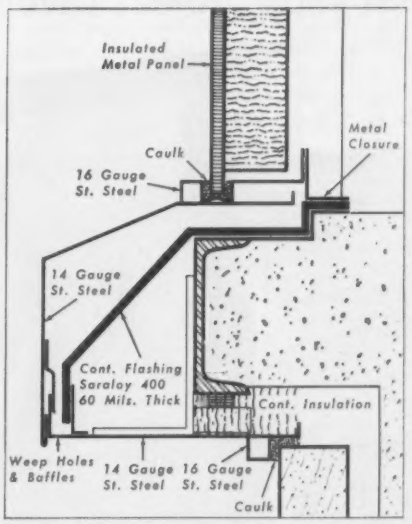
SARALOY® 400

seals hard to flash joints of any design

Here's a new material that outperforms other flashing materials in hundreds of applications. It's an *elastic* sheet flashing—one that's durable and difficult to damage. Flexible and easy to fabricate on the job, Saraloy 400 helps to solve the toughest design problems — seals joints securely and permanently. Since Saraloy 400 flexes with the expansion and contraction of materials to which it's attached, it lasts years longer than ordinary flashing materials.

Saraloy 400 was selected as a flashing at each floor level on this recently completed bank building in downtown Detroit. Its elasticity and durability were put to good use in flashing the concrete ledges, which were then finished with stainless steel sills.

Saraloy 400 can be bonded to roof coverings, concrete, metal, wood, masonry and glass-reinforced plastics. It's weatherproof and waterproof—won't check, crack or peel. Specify Saraloy 400 for long lasting service life on those hard to flash joints. An FHA Materials Release has been issued. For more information, write to THE DOW CHEMICAL COMPANY, Midland, Michigan, Plastics Sales Department 1700EB2.



SARALOY 400 seals outer building surfaces from moisture before stainless steel sills are installed. Note how Saraloy 400 conforms to irregular surface contours.

Dow Building Products at Work

STYROFOAM*— Long lasting insulation for cavity walls; an effective insulating base for plaster. Rigid, low "K" factor, resistant to water and water vapor.

SCORBORD*— (Pat. applied for) Superior rigid insulation for foundation perimeters, slab floors. Exclusive pre-scored feature speeds installation.

ROOFMATE*— Lightweight rigid insulation for built-up roofs serves as its own moisture barrier. Reduces blistering, resultant leaks.

POLYFILM*—High quality polyethylene film for temporary enclosure or moisture barrier under slab or insulation.

*Trademark

THE DOW CHEMICAL COMPANY, MIDLAND, MICHIGAN

Mercy Hospital,
Springfield, Ohio.
Architect:
Maguolo & Quick,
L. P. Cotter,
Architect-Engineer

when your project involves a laundry department...

M. W. Hendley, Assistant Southern Division Manager, Cincinnati, Ohio, has assisted architects in planning more than 100 laundry departments during his 24 years with American. Recently he worked with L. P. Cotter of Maguolo & Quick, Cincinnati, Ohio, architect, preparing laundry plans for the 350-bed Mercy Hospital, Springfield, Ohio.

it's a job for American!

Helping architects plan laundries is a specialized activity at American.

Our men are intimately familiar with the many important factors which determine size, layout, cost, personnel and type of equipment needed for any proposed laundry facility. What's more, we will furnish detailed drawings, floor plan layouts and complete specifications — everything you need to incorporate an efficient, space-saving laundry department into your overall building design.

Rely on the experience that has proved itself in hundreds of successful installations. When your project involves a laundry department . . . call your nearby American representative, or write for complete information.

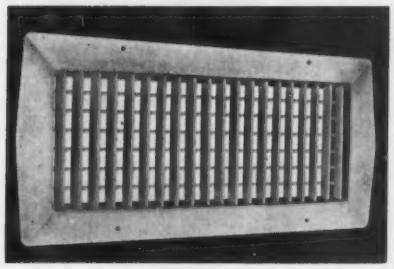
You get more from American

The American Laundry Machinery Company, Cincinnati 12, Ohio

For more information, turn to Reader Service card, circle No. 314

AIR AND TEMPERATURE
Plastic Air Registers

A major breakthrough in the air outlet industry—injection-molded grills, registers, and diffusers of nylon—is introduced by a 4-page folder. In addition to low price, "Aristocrat 400" series has many features not



available in metal designs: non-combustion, heat resistance to 300 F, freedom from distortion at elevated temperatures, corrosion resistance, and minimal attraction of dust. Unusual "sound barrier" characteristics of nylon permit higher velocities without whistling or roaring. Exclusive "Air-Loc" provides permanent air-tight closure against wall or ceiling without use of gaskets. Two-tone contour styling is by Morris Lapidus. Air Guide Plastics Corporation.

On Free Data Card, Circle **200**

Disposable Odor Filter

New concept in odor filter design, using activated carbon, combines odor removal and air cleaning in a single low-cost unit. Unlike many conventional units of this type, "Odor Filters" are compact, lightweight, completely disposable, and require no reactivation. Range of standard sizes fits standard 2" frames. Four-page brochure describes the principles of this product and gives engineering data. American Air Filter Company, Inc.

On Free Data Card, Circle **201**

Make-Up Air Remedies

Correction of make-up air problems (resulting when fans draw fumes, smoke, and odors from plants, restaurants, etc.) are discussed in four-page Bulletin EN-5911. This bulletin outlines a system that eliminates negative pressure by introducing and tempering make-up air, and suggests methods for selecting proper equipment. Also included are diagrammatic instructions for wiring the control arrangement. Reznor Manufacturing Company.

On Free Data Card, Circle **202**

Handy Equipment Chart

Unique reference chart, showing 136 air-conditioning products and 49 gas- and oil-fired furnaces, is designed for determining the proper unit to meet specifications of a particular job. With its broad and complete line, ranging widely in types and sizes, the company is able to meet requirements of any application. Typhoon Air Conditioning Division, Hupp Corporation.

On Free Data Card, Circle **203**

CONSTRUCTION
Steel Roof-Deck Sections

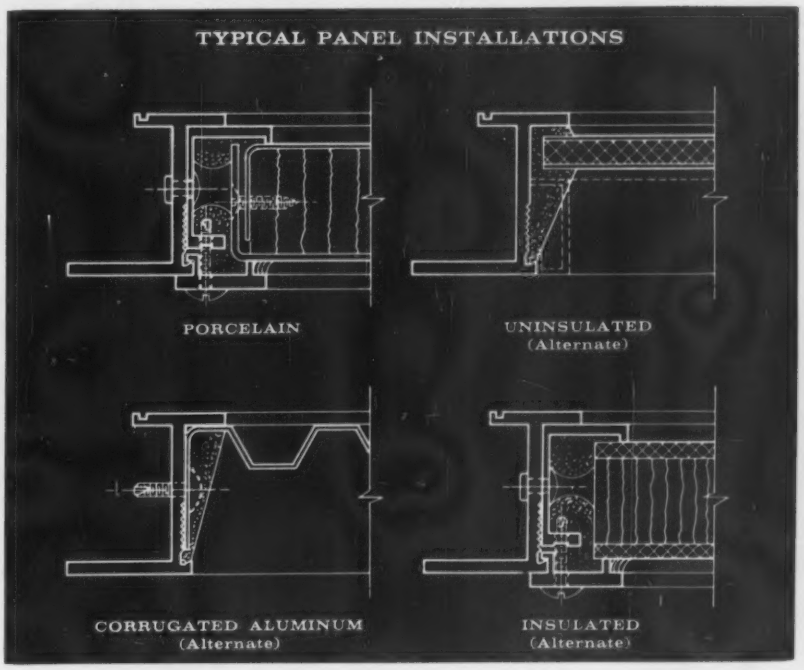
Details on a 24"-wide steel roof-deck section (that speeds roof installation work by 50 percent), and on other roof-deck sections (that meet nearly all requirements in standard roof construction) are included in new 16-page catalog. Publication D-60 illustrates cross-sections of firm's complete line of deck plate, giving design features and engineering data. It also contains useful information on steel deck plates for sidewalls, partitions, concrete floor forms, and reinforcing. Building Products Division, The R.C. Mahon Company.

On Free Data Card, Circle **204**

Economical Curtain Wall

New aluminum "Economy Wall" for multistory buildings provides all the advantages of stock units yet has a flexibility enabling the architect to integrate the system easily into his own design. Main advantages of "System HR 202," discussed in 8-page brochure, are important savings in material and labor, decreased wall loads, and speedy erection. Full specifications and details are given. Reynolds Metals Company.

On Free Data Card, Circle **205**



ACI Standards Compiled

Most recent compilation of current ACI standards, recommendations, and specifications, is the 382-page, 1959 edition of the ACI Book of Standards. Compiled under one cover are 15 standards, covering such subjects as code requirements for reinforced concrete, winter and hot weather concreting, proper proportions for concrete, mixing and placing of concrete, tests determining relative bond value of reinforcing bars, design and construction of concrete pavements and chimneys, application of Portland cement paint, and application of mortar by pneumatic pressure. Write to: American Concrete Institute, P.O. Box 4754, Redford Station, Detroit 19, Michigan. ($5.00).

Continued on page 106

Continued from page 105

Year-Round Concreting

ACI's standard recommendations for cold-weather concreting are summarized in an 8-page pamphlet entitled "Year-Round Concreting." It includes sections on general requirements, accelerators, preparation, and production requirements. Large chart illustrates data on the effect of 2% calcium chloride at various temperatures on different types of cement. Guide specifications are appended. Calcium Chloride Institute.

On Free Data Card, Circle **206**

Color in Glass Block

New "color-*in*-the-glass" block, for the first time giving a practical block made with integrally colored glass, is illustrated in 4-page folder. "Shade Aqua" is available in two decorative styles: both smooth-faced, with either uneven configurations or repetitive concentric circles on interior faces. "Shade Green" is a vertical-ribbed block with prismatic solar-selecting design. Installation instructions and a table of multiple dimensions are given. Owens-Illinois.

On Free Data Card, Circle **207**

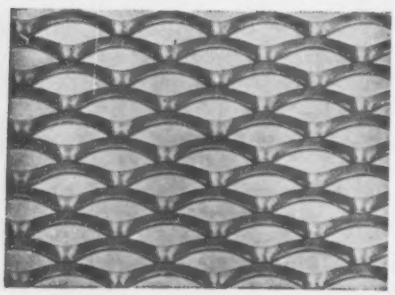
Permanent Concrete Forms

New, permanent, corrugated-steel forms for concrete floor and roof slabs is described in 4-page folder. Exclusive properties of "Fab-Form," such as greater lengths up to 28′3″, and widths up to 32″, give economies in material and in erection time. New surface coating assures positive weather protection. Folder gives load tables, accessories, installation directions, and specifications. Pittsburgh Steel Products Division, Pittsburgh Steel Company.

On Free Data Card, Circle **208**

New Expanded Metal Mesh

Five new architectural expanded metal meshes have unusual-shaped



openings that are unlike conventional diamond-shaped patterns. In one pattern, openings are of two sizes, recurring regularly. Each of the five patterns is available in three different gages of carbon steel and two of aluminum. Eight-page catalog suggests that principal uses are in façade refinishing, horizontal and vertical sunshades, stair and balcony railings, and area dividers. Penn Metal Company, Inc.

On Free Data Card, Circle **209**

Prestressed Concrete Uses

Studies of 16 outstanding projects, in 20-page Bulletin MBR-P-13, show unlimited applications for high-quality prestressed concrete. Photographs and job stories cite role played by "Pozzolith" in achieving high qualities required for both pretensioned and post-tensioned work. Some of projects covered are: a lift slab, 120′ long bridge girders, and a 2,000,000-gal water tank. The Master Builders Company Div., American-Marietta Company.

On Free Data Card, Circle **210**

Clay Flue Lining

In an attempt to eliminate chimney and flue fires, which reportedly account for almost 20 percent of residential fires, this 6-page folder gives recommendations for chimney construction. Suggestions are based on those of the National Board of Fire Underwriters and meet or exceed requirements of most local building codes. Special advantages afforded by clay flue linings are presented. Clay Flue Lining Institute.

On Free Data Card, Circle **211**

DOORS AND WINDOWS

Wood Window Suggestions

Brochure covering wood window details has been issued as part of a continuing series that will eventually cover all aspects of millwork in residential and commercial buildings. Brochure, designed primarily for architects, draftsmen, and specification writers, has all material in removable looseleaf form for easy use. Recommendations are given for window walls, double-hung, awning, and hopper windows, on the topics of wood species, nails, glazing, calking, finishing, preserving, weatherstripping, and workmanship. Architectural Woodwork Institute.

On Free Data Card, Circle **212**

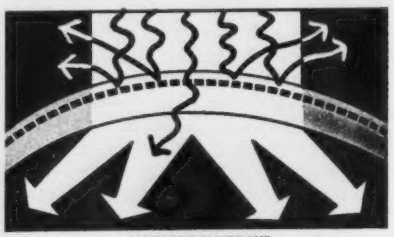
Weatherstrip/Door Stop

Weatherstripped door stop provides unique functional advantages—according to manufacturer, up to 80 percent more efficiency in preventing air leakage. Noise control is another advantage, with closing and slamming noises being noticeably reduced. Exclusive nylon "feather-edge" maintains an unragged appearance indefinitely. Aluminum extrusion is simply installed with stainless-steel screws. Seal-Draft Weatherstrip Division, Sun Screen Products, Inc.

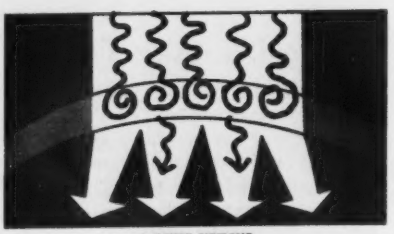
On Free Data Card, Circle **213**

Easy Dome Selection

Tool for estimating amount and type of daylighting units appears in 1960 "Skydome" catalog. Selector tables integrate fundamentals of good daylighting with geographical locations, ambient brightnesses, average weather conditions, and illumination the-



1. REFLECTIVE SKYDOME



2. DENSE SKYDOME

ories. Quick advice is given on number and spacing of domes, size needed for a given light level, and preferred type of dome material for a specific job. This 20-page catalog also includes complete line of "Skydomes." Wasco Products, Inc.

On Free Data Card, Circle **214**

Elegant Door Accessories

Distinctive line of door accessories—levers, knobs, and knockers—is presented in 12-page brochure. There are reproductions of museum pieces, as well as several original designs, each making for an elegant decorative highlight. "Clavos," or Spanish nails, date from the 14th Century, when

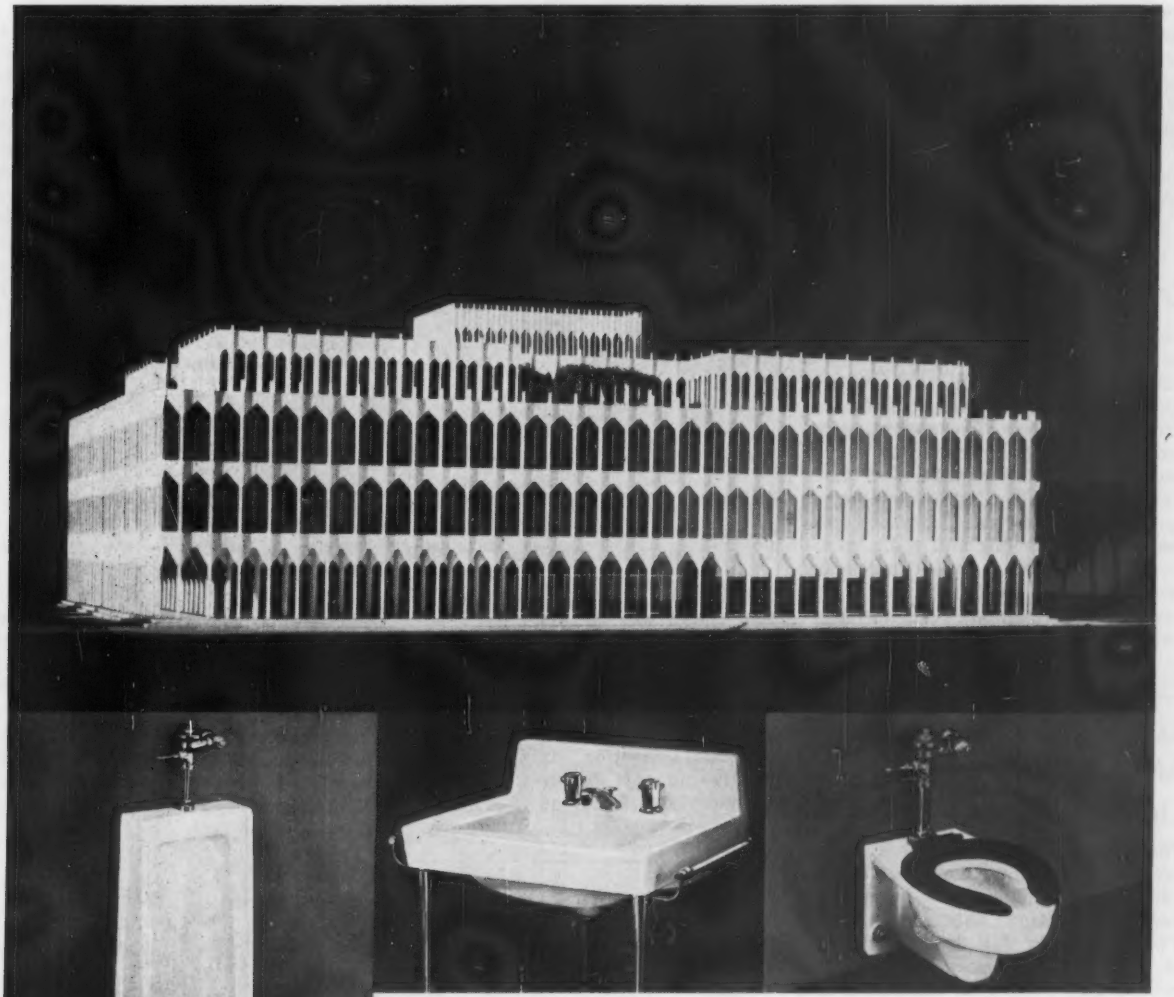
Continued on page 108

College of Education—Wayne State University features Briggs Beautyware—it passes every test!

Sculptured styling and carefully worked out functional features are among the important reasons architects specify Briggs Beautyware. Perhaps an even more important reason why Briggs is chosen is its remarkable durability. Crafted in high density vitreous china to rigid quality controls, Briggs Beautyware brings extra years of dependable operation.

These same advantages can be yours in your next commercial, industrial or institutional project. You'll find the Briggs line complete and easy to work with . . . its design, by Harley Earl, Inc., attractive and functional. Specify Briggs Beautyware—the brand that makes the difference! Attainable anywhere. Send for free literature. Briggs Mfg. Co., Warren, Mich.

COLLEGE OF EDUCATION—Wayne State University, Detroit, Mich. Architect: Minoru Yamasaki and Associates. Plumbing Contractor: Lorne Plumbing & Heating Company. Distributor: Nelson Company.



BRIGGS SPARTON URINAL is an 18-inch wide stall-type with integral flushing rim. Comes in your choice of the six Briggs Beautyware compatible colors or white.

BRIGGS MILTON LAVATORY has 5-inch back, two cast-in soap depressions, anti-splash rim. Wall-mounted with or without chrome-plated legs and towel bars.

BRIGGS SULTAN WATER CLOSET is wall-hung with elongated closet bowl. Available in any one of the Briggs Beautyware compatible colors plus popular white.

BRIGGS

BEAUTYWARE

THE STYLE LEADER IN PLUMBING FIXTURES

For more information, turn to Reader Service card, circle No. 315

Continued from page 106
they were used to hold wooden door planks in place. Smaller clavos were often applied to furniture. This collection includes several handsome designs for door and wall decoration. Clavos, Inc.

On Free Data Card, Circle **215**

Double-Glazed Windows for Church Installations

Tracing templates are available for new type of church window that is double glazed both for extra insulation and for protection of valuable stained glass. Frames, 2⅞" in depth, are an extruded-aluminum alloy; curved sections are equipped with screw-on glazing bead and straight sections with a snap-in bead. These "Vampco 3000" windows answer long-standing need for a strong window in shapes required for traditional and modern churches. Valley Metal Products Company.

On Free Data Card, Circle **216**

Complete Fire Door Data

Document giving data on the various classes of fire doors is the first of a publication series on this subject sponsored by the National Board of Fire Underwriters. These eight pages contain complete information as to door type, size, hardware, and glass light for the required protection of openings in fire walls, vertical communication, corridor and room partitions, and exterior walls. Tables are presented in straightforward and easy-to-read fashion. Underwriters' Laboratories, Inc.

On Free Data Card, Circle **217**

ELECTRICAL EQUIPMENT AND LIGHTING

Lighting Fixture Guide

This comprehensive reference for architects and lighting engineers gives 126 pages of up-to-date installation and construction data on fixtures. The company's full line of fixtures is shown—incandescent, fluorescent, commercial, industrial, landscape, and special project. Solar Light Manufacturing Company.

On Free Data Card, Circle **218**

Closed-Circuit TV

Providing TV receiver outlets and camera inputs at any point, the "Jerrold System" gives unlimited flexibility in its closed-circuit system. Distant broadcast channels and locally-originated programs are easily mixed. Case studies of the system in use, for public school observation and for hospital recreation, show some of its possibilities. Complete planning, engineering, and installation are included in the system. Jerrold Electronics Corporation.

On Free Data Card, Circle **219**

Imported Light Fixtures

"Modern in the tradition of good taste" is the concept behind this new imported collection of lighting fixtures. Some of the handsome fixtures

included are: the Persian Look, exotic colors and shapes expressed in contemporary terms; the Jewel Collection, layers of fine Scandinavian art glass used in various combinations; hand-blown Venetian glass globes in brilliant colors; and the Ceramic Collection, dramatic Italian fixtures in soft textures and colors. Raymor Manufacturing Division, Inc.

On Free Data Card, Circle **220**

High-Frequency Bus Duct

New bus duct to distribute high-frequency power with minimum voltage drop, and with little change in phase relationship, is presented in 12-page brochure. Duct will operate with high efficiency at frequencies up to 1000 cycles per second, and power at even higher frequencies can be successfully distributed with it. Cost of bus duct is considerably less than for conduit and cable. Westinghouse Electric Corporation.

On Free Data Card, Circle **221**

Ballast Cross Reference

Fold-out chart on fluorescent-lamp transformers, to show company's catalog-number equivalents for ballasts of other manufacture, has been published. It also contains a ballast rating table and other important information on mounting dimensions, individual cartons, code dating, etc. Universal Manufacturing Corporation.

On Free Data Card, Circle **222**

FINISHERS/PROTECTORS

Painting Steel Sheet

From the research efforts of the National Paint, Varnish and Lacquer Association, cooperating with the American Iron and Steel Institute and the American Zinc Institute, comes this brief but valuable volume on painting galvanized steel. Reasons for painting—appearance, heat reflection, and longer life—are discussed. Advice is given on selection and application of paints. Special instructions for roofing and gutters are also included in this 16-page booklet. American Iron and Steel Institute.

On Free Data Card, Circle **223**

INSULATION

Electric Heat Insulation

Correct insulation of buildings for the full benefits of electric heating is discussed in a 6-page folder. Publication gives the advantages of proper insulation and describes all six commonly-used types of electric heating methods. Specifications meet the heat loss recommendations set forth by the National Electrical Manufacturers Association in their manual on electric house heating. Baldwin-Ehret-Hill, Inc.

On Free Data Card, Circle **224**

SANITATION, PLUMBING, WATER SUPPLY

Tempered-Glass Drainline

Lifetime drainline system of "Pyrex" is now available for disposal of corrosive wastes. System of tempered-glass piping and fittings features a one-piece coupling designed to make a quick permanent compression joint, and is engineered for vertical or horizontal mounting or for burial in ground. Twelve-page Bulletin PE-30

Continued on page 110

ENGINEERED BY EDWARDS

High Combustion Efficiency In New Smokeless Oil-Fired Hot Water Heating Units

• Rumble suppressant design • 100,000 to 3,000,000 BTU/Hr capacities • 100% automatic air elimination in all Zone-A-Matic gas and oil-fired units

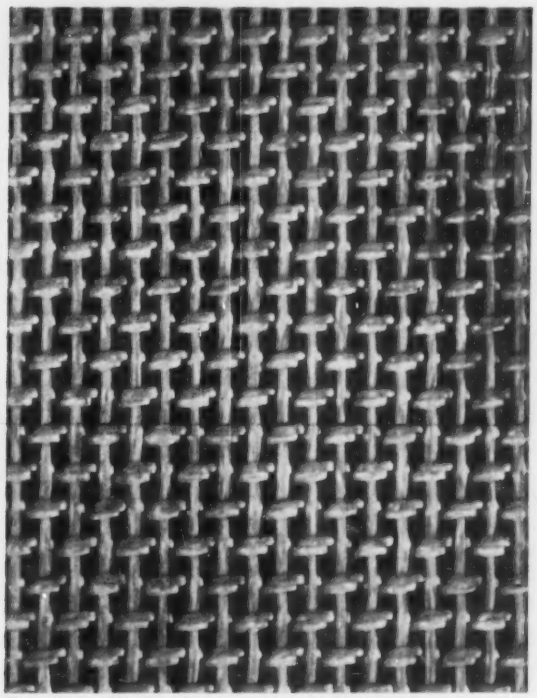
FREE....70 page design handbook on single and multi-zone hot water baseboard heating systems.

EDWARDS ENGINEERING CORP.

2526 ALEXANDER AVE., POMPTON PLAINS, N.J.
TEMPLE 5-2808

"One of the nation's largest manufacturers of Residential and Commercial Boiler-Burners (gas and oil-fired.). Baseboard and Steel-Fin Radiation, Motorized Valves, Air-Cooled and Water-Cooled Condensers."

For more information, turn to Reader Service card, circle No. 316



This is FABRICANE. A new cane material woven with man-made fibers for long-life, durability, and easy installation. For panels on furniture and screens, upholstery and for wall coverings. Samples on request to A/D Department.

Woven at our mills in Blacksburg, South Carolina
Wendell Plastic Fabrics Corp., 1220 Broadway, New York 1

For more information, turn to Reader Service card, circle No. 317

A complete line of Electric and Manual Folding Partitions

Torjesen

Two of eight folding partitions installed at the Sheraton-Binghamton Hotel, Binghamton, N. Y. Architect: Samuel M. Glaser Associates

✻ **AUTOMATIC ELECTRIC PARTITIONS**

✻ **MANUAL PARTITIONS**
(a) Top Hung — Center Pivot — All Hinged
(b) Top Hung — Center Pivot — Pair or Individually Operated
(c) Top Hung — Edge Pivot — Pair Operated
(d) Bottom Bearing — Edge Pivot — Pair Operated
(e) Bottom Bearing Edge Pivot — Individually Operated

✻ **HIDDEN PARTITIONS**
• No Floor Track • No Exposed Hardware
• Remote Stacking

now available at the same price as Duck or Vinyl

Torjesen "WALL-A-WAY" Folding Partitions with TOROPLY

America's newest, most economical, pre-finished wood paneling, in a choice of rich finishes. In addition to its economy and durability there is no finishing required or necessary. Toroply is impervious to stains such as ink, crayon, lipstick, etc. **Samples and test results on request.**

Write for fully detailed catalog with 3" scale drawings

Visit our plant and tour its facilities

TORJESEN, INC.
209 - 25th St., Brooklyn 32, N.Y.
Cabinet Makers since 1919

Over 50 representatives in key cities to serve you

Affiliates:
BAR-RAY PRODUCTS, INC. • X-Ray Accessories and Radiation Protection
CAPITAL CUBICLE CO., INC. • Cubicle and Track

For more information, turn to Reader Service card, circle No. 318

Continued from page 108
contains product and property data, information on making joints, complete list of available fittings, and a sample specification. Corning Glass Works.

On Free Data Card, Circle **225**

Bathroom Arrangements

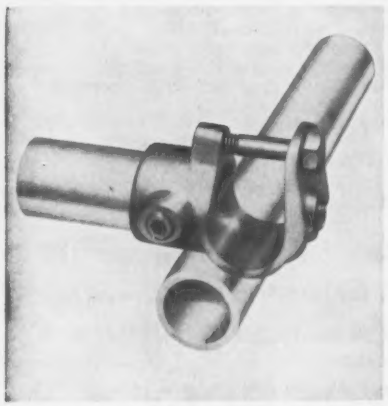
New edition of the catalog "Guide to Quality Plumbing Fixtures" stresses color and remodeling in bathrooms. Twenty-page booklet answers numerous requests for information about bathroom arrangement and color-schemes. Booklet is also a complete reference on designed color of fixture models and selection of fittings. Kohler Company.

On Free Data Card, Circle **226**

SPECIAL EQUIPMENT

Pipe Fitting for Adding to Existing Assemblies

"Kee Klamp Slip-on Fitting" makes it possible to add units to structures built of pipe without dismantling



assembly. Fitting slips over pipe already in place and is locked in position as part of the assembly with nut and bolt. It is made for pipe sizes ¾" to 1½" and can be used to add shelf frames or make extensions to existing storage or other racks. Kee Klamps North America Limited.

On Free Data Card, Circle **227**

Guides for Steel Desks

"Suggested Specifications for Top Quality Steel Desks and Filing Cabinets," although prepared with reference to the company's own units, can be applied to almost any office furniture. Covered in the 8-page bulletin are suggestions for steel gage on exterior surfaces, types of top fasteners for desks, standards for exterior finishes, and requirements for hardware and trim. Bentson Manufacturing Company, Inc.

On Free Data Card, Circle **228**

Dormitory Furniture

With the idea that furniture planning should be integrated with planning of the dormitory, this manual provides valuable plans and important considerations of construction, costs, financing, and bidding. The 42-page booklet is intended as a text on the subject, rather than a catalog; various illustrations are intended as suggestions, rather than stereotypes. Sligh-Lowry Contract Furniture Company.

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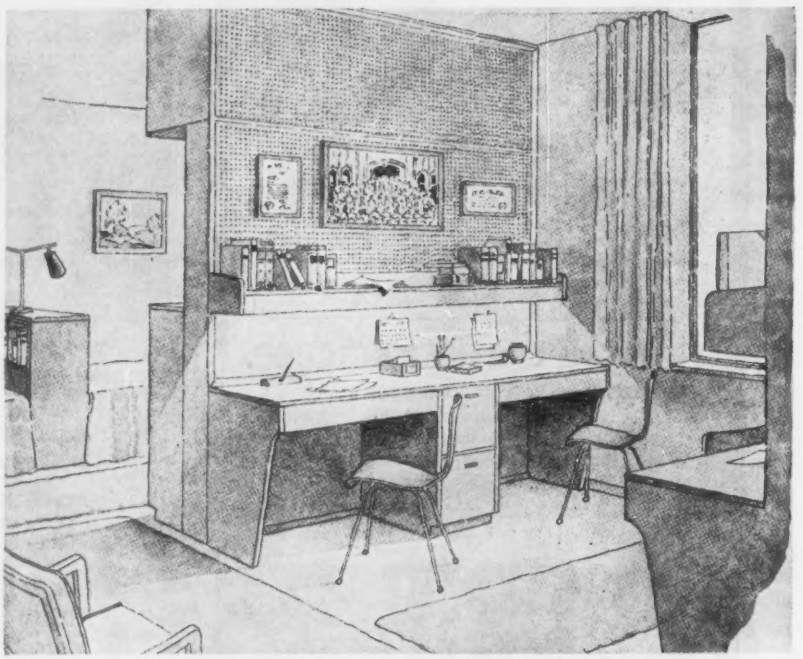

Mail-Handling Equipment

Catalog of mail-handling equipment illustrates in 12 pages the full line of chutes, boxes, and mail-room equipment produced by the company that installed the world's first mail chute in 1883. Wide selection of units covers any type or size of communication. Complete engineering service is provided for any system; leasing is a possible option. Owner receives a guarantee that all installations meet the regulations of Post Office Department. Cutler Mail Chute Company.

On Free Data Card, Circle **230**

Modular Seating Units

"Modulum," new concept in modular seating and storage, is equally suitable for residential and larger installations. Designed by Richard W. Thompson for Glenn of California, and honored with 1959 certificate of merit from American Institute of Decorators, the group combines beauty and warmth of wood with durability and sleekness of aluminum. The 22" module used throughout the collection permits an infinite variety in seating and storage solutions. Glenn of California.

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Sootless Prefab Chimneys Have No Rain Cap

Designed without a rain cap, prefabricated chimney line assures the free flow of combustion gases from house, and soot-free roof and chimney. An evaporator tank in the chimney holds a 15" steady rainfall, which is evaporated either by heat from the sun or from flue gases. Condensation Engineering Corporation.

On Free Data Card, Circle **232**

Bath Storage Unit Requires No Wall Recess

Surface-mounted vanity mirror with 4"-deep compartment across the bot-

Continued on page 112

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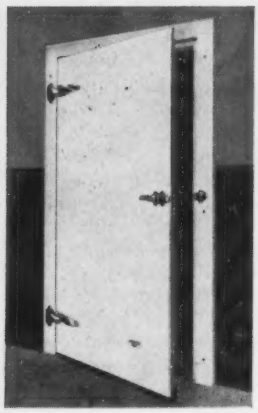

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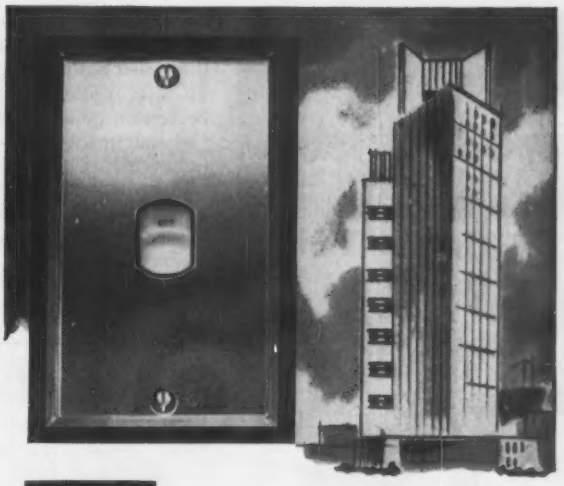

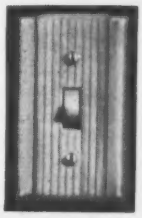

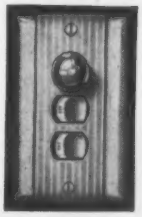

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Many of today's switches are specialties primarily for decoration; some others are sturdily constructed for heavy duty performance. Now in one switch these two features are combined – P&S Rocker-Glo. Rocker-Glo's design and action are such that it can be pressed, pushed, rocked or rolled. It has the basic rugged mechanism that insures long, trouble-free performance. Eventually all light switches may have a rocker action – like Rocker-Glo.

Rocker-Glo switches are AC switches designed to be used at full current rating on tungsten filament and fluorescent loads (one switch takes the place of two ordinary AC-DC switches on fluorescent loads). It can be used anywhere old style toggle switches are used.

Rocker-Glo's clean functional lines and soft beauty blend with any decor and add a touch of gracious charm to any type of building.

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Exolon Anti-Slip Electric Furnace Grain is easily troweled into the surface of concrete to give it hardness and wear resistance far beyond the usual Silica Sand mixtures. Never polishes smooth in heaviest traffic. Specify for SAFETY.

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Available in Aluminum Oxide and Silicon Carbide grains. The latter is harder and adds sparkle and glitter to the concrete surface. It is a little higher in cost than Aluminum Oxide. Both bond with cement producing safe, non-slip surfaces.

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Continued from page 110

tom adds custom flair to new or remodeled bathrooms, without requiring a wall recess for installation. Mirror size is a generous 42″x24″; and since compartment projects forward along the full 42″ length, its top provides an open shelf in addition to the enclosed space. Sliding glass doors protect 7″-high compartment; shelf and mirror frame are of stainless steel. F. H. Lawson Company.

On Free Data Card, Circle 233

Automatic Floor Mat

Recessed floor mat, that wipes shoes and traps dust, can keep buildings cleaner and save considerable cleaning expense. "Miracle Mat" is a heavy rubber-mounted aluminum grill, with brushes running width of grill just below slats; pressure of a footstep depresses grill, actuating an electric motor which puts brushes in motion. Hundreds of strokes per minute continue as long as pedestrian remains standing on mat. Dust and dirt are received in a catch pan or flushed into building drains. Progressive Engineering Company.

On Free Data Card, Circle 234

New Partitioning Systems

In 24-page 1960 catalog, five basic partitioning types are presented. These include: new "Aetnawall-A" which features extruded-aluminum shapes with snap-on pilaster covers,

and "Aetnawall-B" which is a 3″ post-and-pilaster system. Other types are a slender-profile custom partition manufactured to any ceiling height or panel width, a 3″ flush-joint partitioning, and a 2⅜″ system. Aetna Steel Products Corporation.

On Free Data Card, Circle 235

Form for 36″ Fireplace Guaranteed Smoke-Free

New complete form for the popular 36″ fireplace permits building of a perfect fireplace more quickly and easily than by laying masonry, and saves up to ½ ton of masonry. Smoke-free construction is guaranteed. Perfected from information supplied by masons, builders, and fireplace designers, "Benefire No. 37″ is a complete form—from hearth to flue. Unit is set on the base of the fireplace, the flue is placed on it, and masonry is laid straightaway with no diagonal courses. Bennett-Ireland, Inc.

On Free Data Card, Circle 236

SURFACING MATERIALS

Cushioned Floor Tile

"Airpath," cushioned rubber floor tile for areas where special noise control and underfoot comfort are required, is described in 6-page folder. An acoustical properties chart shows the improvement in impact-transmission loss for various floor tiles over that of bare concrete. Additional properties and recommended installations are also discussed. B. F. Goodrich Company.

On Free Data Card, Circle 237

Metal/Plastic Wall Sheet

New vinyl-metal laminate combines strength of metal and surface of vinyl to form a pre-finished interior wall material with custom appearance. Various colors, textures, and patterns are available for a wide range of decorative effects. "Arvinyl" can be installed on furring strips or directly on studding as a basic wall, or on concrete block or other rough structural wall core, and is ideally suited to commercial and institutional applications. Details, actual installation photos, and specifications are included in 8-page brochure. Arvin Industries, Inc.

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PROGRESSIVE ARCHITECTURE NEWS REPORT

REINHOLD PUBLISHING CORPORATION

430 PARK AVENUE NEW YORK 22, N.Y.

Publisher ..... D. Bradford Wilkin

Editor ..... Thomas H. Creighton

News Editor ..... James T. Burns, Jr.

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Write for Bulletin CL-510
Detail shows how dovetail extrusions (which mount on any centers) hold brackets at any desired height.
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Now Available to all Architects

One hundred years of architecture in America

edited by
FREDERICK GUTHEIM

9" x 9", $4.00

This handsome guide is based on the exhibition celebrating The Centennial of THE AMERICAN INSTITUTE OF ARCHITECTS. It traces the history of architecture in America by means of unusual contemporary photographs which give a freshness to the material so familiar to many architects.

Sturdily bound, in cloth, it contains all the black and white photographs in the exhibit and color reproductions of 6 of the 10 color transparencies from the section TEN BUILDINGS IN AMERICA'S FUTURE. Each photograph gives the name of the building, the year it was built, when it was demolished and the name of the architect.

THE SEARCH FOR MEANING IN STYLE is well expressed in the HOUSE FOR WALTER GRESHAM. The architect of the mid-century had neither the disposition to create reproductions nor the knowledge to copy accurately. This innocent freedom allowed growth and experiment.

THE INCREASE IN SCALE became a problem of unprecedented magnitude. The skyscraper won world recognition as a new and characteristic American architectural form. But equally the large hotel, department store, bank, and even the large school were typical. For example—here is CARL SCHURZ HIGH SCHOOL

TRENDS IN RECENT YEARS. Our ideas of how buildings should be functionally organized for human use are still growing as we see in schools, hospitals, and industrial structure. The R. C. A. CHEERY HILL OFFICE AND PLANT is a good example of this trend.

These are only 3 of the more than 200 photographs shown in the book. Other periods discussed are:

• RISING NATIVE STYLES • REFINEMENT AND THE ORDER OF THE BEAUX ARTS • CONTINUITY AND REBELLION • IN TERMS OF MODERN LIFE.

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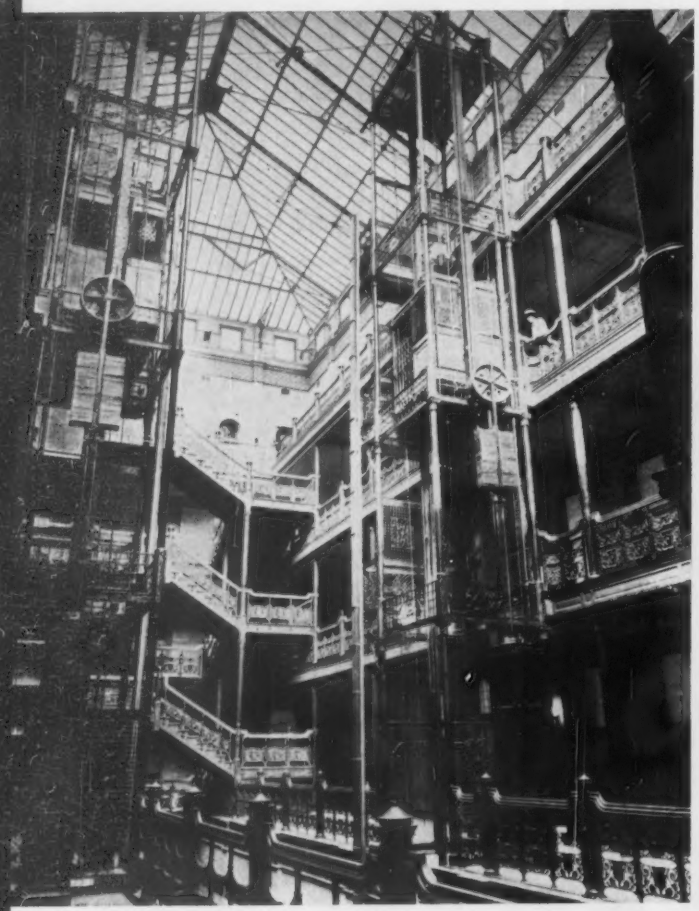

MARCH P/A: 2 CRITIQUES AND SPACE ANALYSIS OF 8 SCHOOLS

EXPLORATION OF THE METALS Two buildings, one 19th Century marvel and a recent, widely noted masterwork, will be the subject of a detailed critique of the use of metals in architecture, in the MARCH Issue of P/A. When visiting Los Angeles recently, Ilse M. Reese noted some striking similarities between that city's Bradbury Building and Minoru Yamasaki's new building in Detroit for Reynolds Metals Company. George Wyman's dramatic use of cast iron in the Los Angeles structure will be compared and contrasted with Yamasaki's crisp and authoritative handling of aluminum in the Michigan building. According to Mrs. Reese, "Two master designers, through the use of two different metals, have given these buildings an elegance and lightness which could not have been achieved through any other materials."

SCHOOLS: SPACE ANALYSES AND CRITIQUE In FEBRUARY P/A, David and Mary Medd, two English school architects, will give their impressions of the past, present, and future of school design in the United States. The Medds recently traveled throughout the U.S. on Commonwealth fellowships, meeting architects and examining and appraising their schools.

Eight schools in as many States will be presented in the March issue. These schools—four elementary and four junior high or high schools—will be featured with particular emphasis on intelligent space use. Tables, in sq ft, will be given for each school on space occupancy of various areas such as classrooms, administration, athletics, toilets, and service areas; and percentage of total space occupied by each category will be shown.

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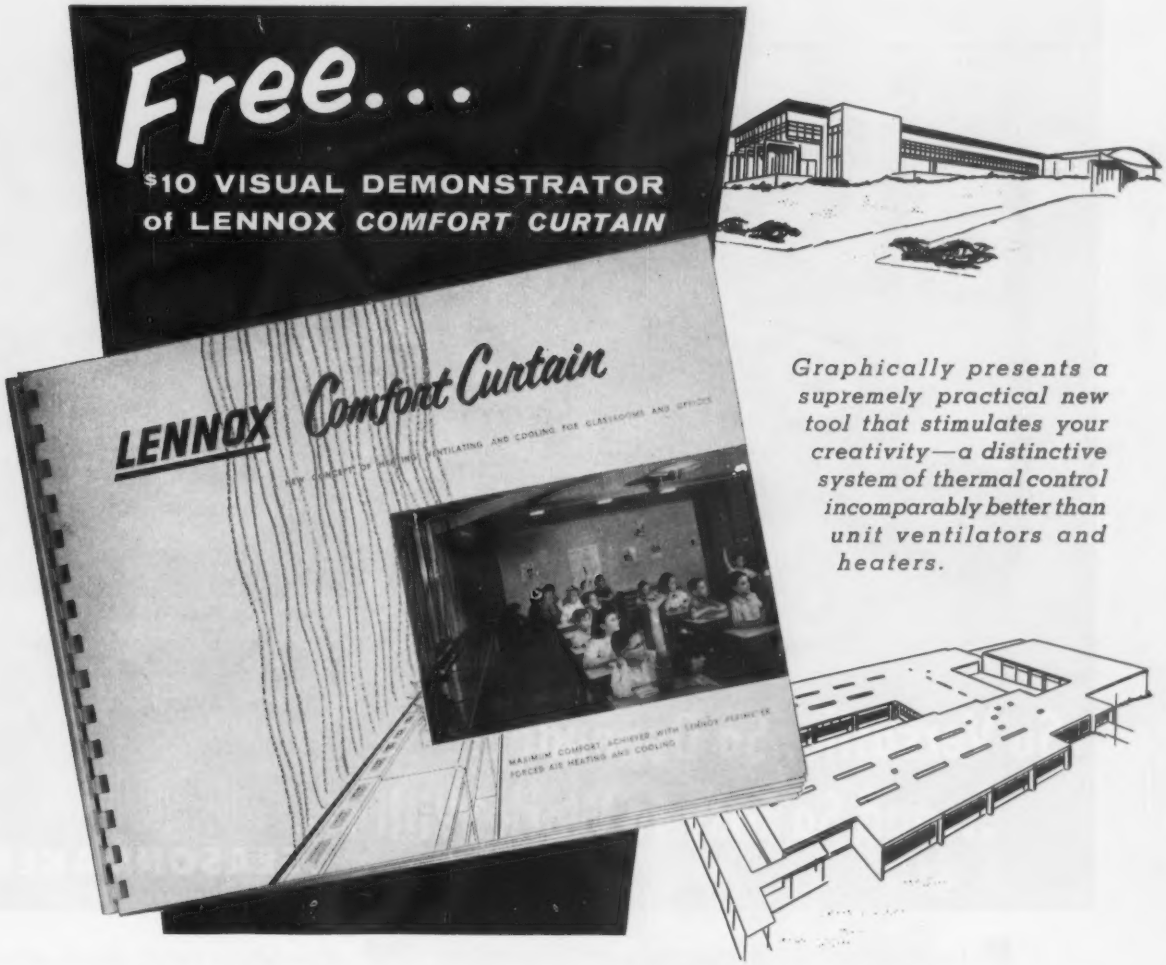

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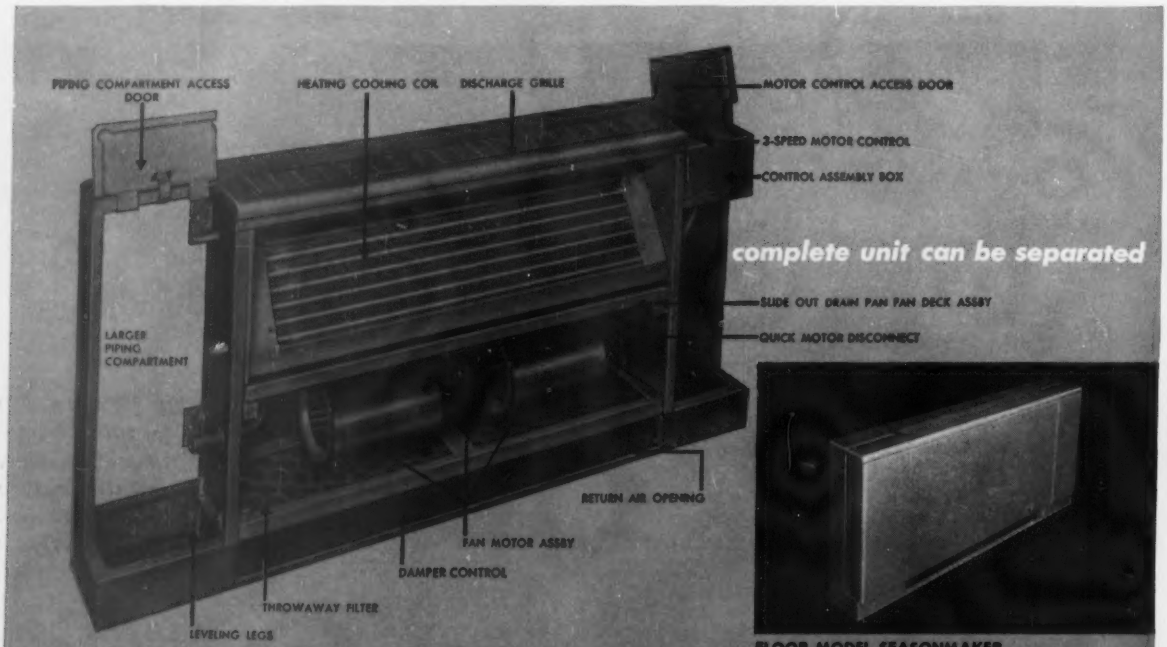

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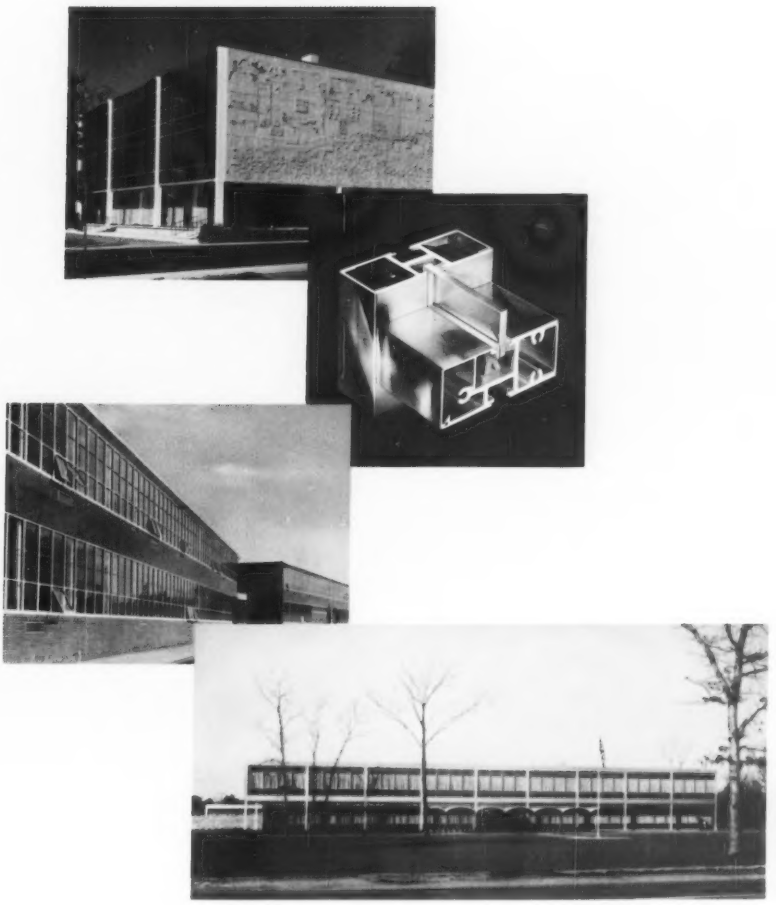

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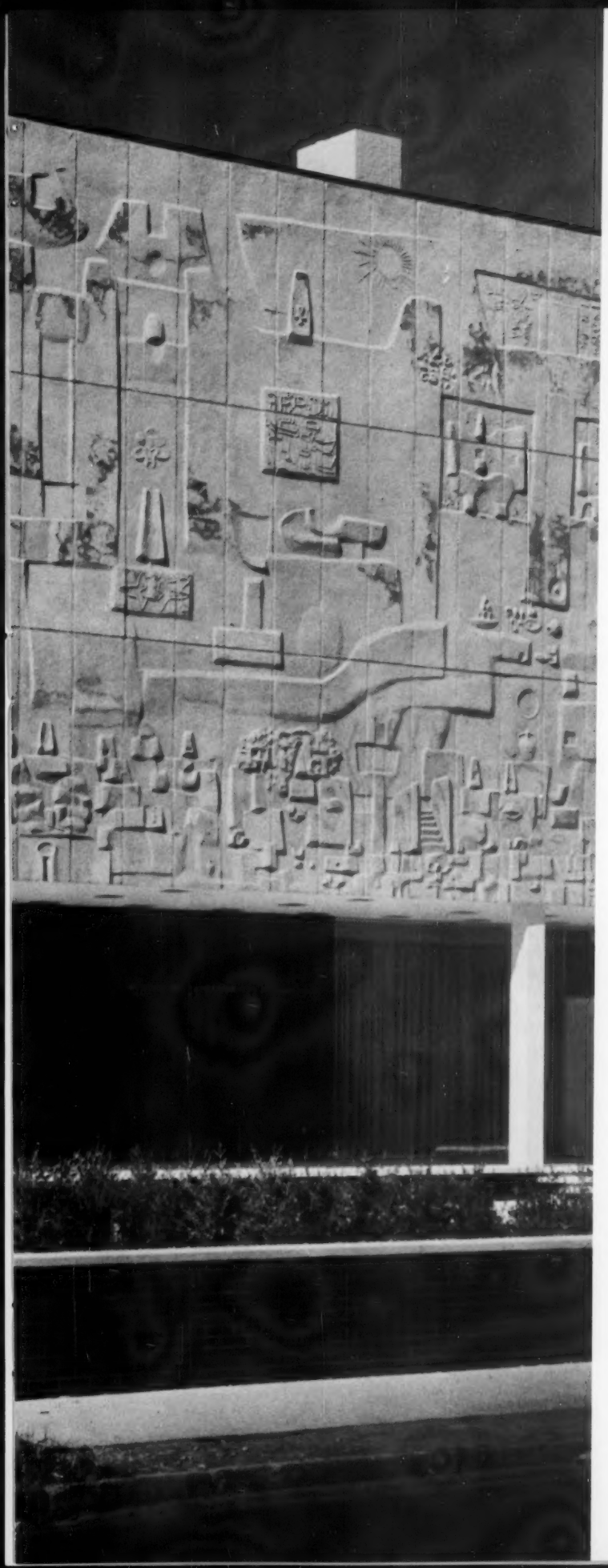
Architect: Frank Grad & Sons, Newark, N. J. Contractor: Massett Bldg. Co., Atlantic City, N. J.



Glass for beauty—A monumental bas-relief, smoothly integrated with shimmering curtain-walls of glass; that's the headquarters of the Mutual of Hartford Insurance Company, Hartford, Conn. And that's one of the beauties of glass. It blends so well, so unobtrusively with other architectural materials.

The great east façade is 110 feet long and 30 feet high. Cast from an original sand mold by sculptor Costantino Nivola, it consists of 132 concrete panels. The northern and southern exposures are framed in curtain-walls of glass, manufactured completely by Pittsburgh Plate Glass Company. Spandrels are dramatic Sable SPANDRELITE®, Pittsburgh's glass in color. Windows are SOLARGRAY® Plate Glass for maximum light with minimum glare. And PITTCO® 82-X Metal Construction frames these components into a weathertight, timeless unit.

Pittsburgh's contribution didn't stop there. HERCULITE® Tempered Plate Glass Doors, West Tension Doors, PITTCO Hinges, Heavy Plate Glass windows, Polished and Rough Plate Glass partitions and Fiber Glass Insulation—all Pittsburgh products, all imaginatively used in the new structure.

When designing with glass, consider Pittsburgh Plate Glass Company as your complete source of supply. We have the production and supply facilities to meet your needs. Call on our Architectural Representatives for help with your glass applications. No obligation, of course.

Architect: Sherwood, Mills & Smith, Stamford, Connecticut.

Contractor: Industrial Construction Co., Hartford, Conn.

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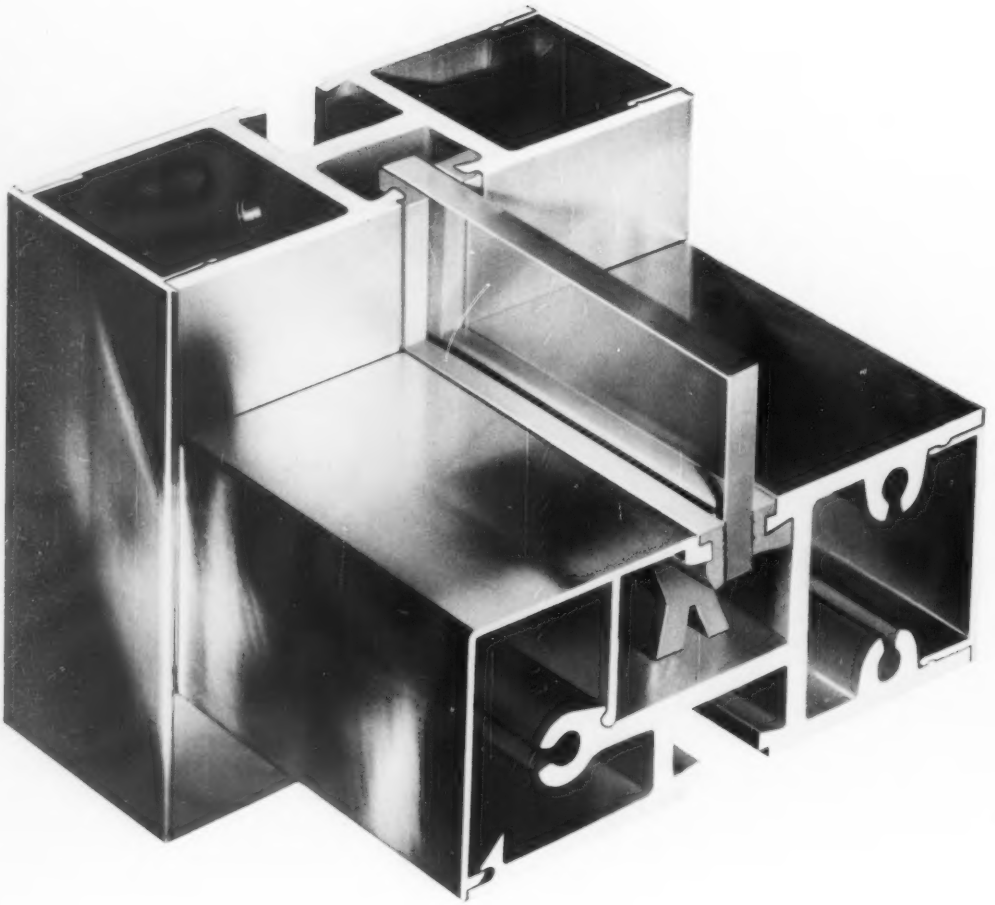

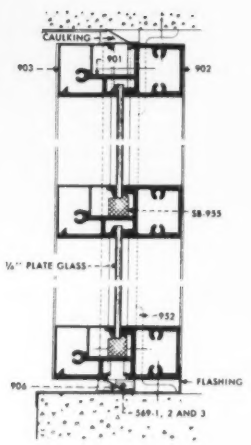

The new Pittco "900" Series—You can frame windows and glass-clad walls completely with the related components of the new PITTCO "900" series. It is provided with a drainage system. All members are aluminum; all fastenings are concealed; all glass is held in neoprene strips and recessed to increase daylight opening. And the clean beauty of every line is strikingly apparent. For details, consult your PITTCO Metal Representative.

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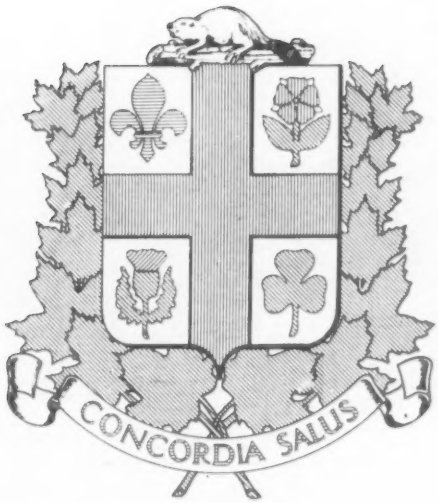
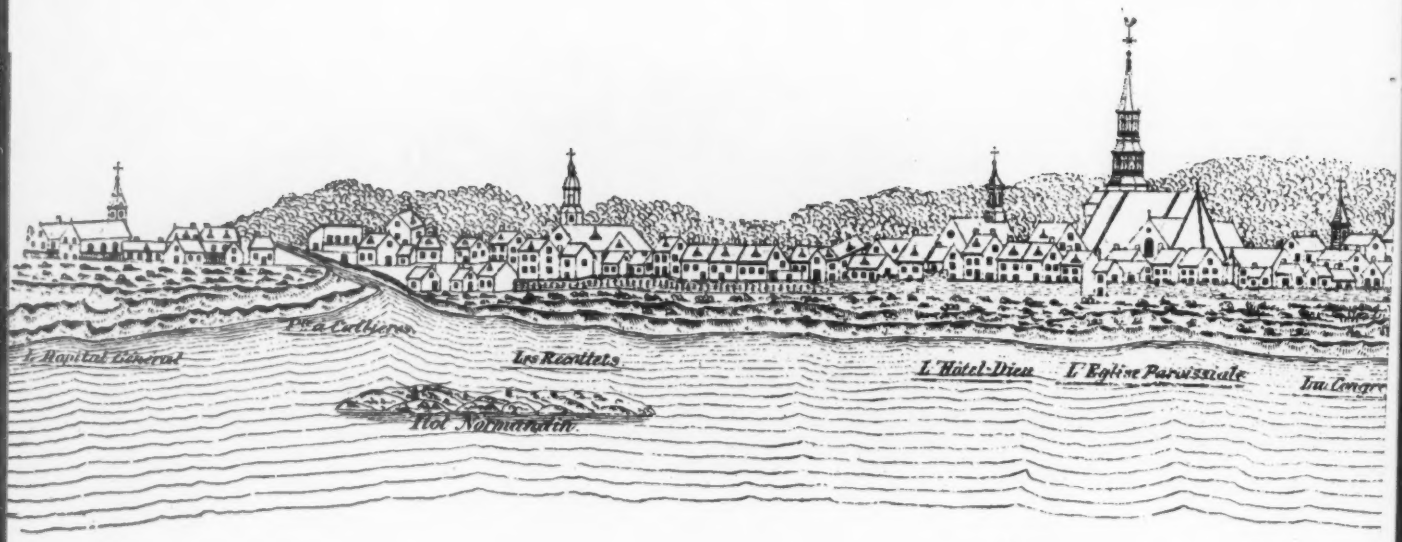


THE STORY OF PLACE VILLE MARIE

by Jan C. Rowan

In 1642 Paul de Chomedey de Maisonneuve gave the earliest European settlement on the Island of Montreal the name of Ville Marie. This name has been chosen to designate a new development now under construction in the heart of the city of Montreal.

I. M. Pei & Associates, Architects & Planners (Henry N. Cobb, Partner in Charge; Vincent de Pasciuto-Ponte, City Planner); Affleck-Desbarats-Dimakopoulos-Lebensold-Michaud-Sise, Associated Architects; Edwards & Kelcey, Traffic Engineers; Brett-Ouelette-Blauer-Associates, Structural Engineers; Severud-Elstad-Krueger-Associates, Structural Consultants; Jas. Keith & Associates, Mechanical-Electrical Engineers; Cosentini Associates, Mechanical Consultants; Foundation Company of Canada Limited, General Contractor; Webb & Knapp (Canada) Ltd., Owner-Developer, William Zeckendorf, President.

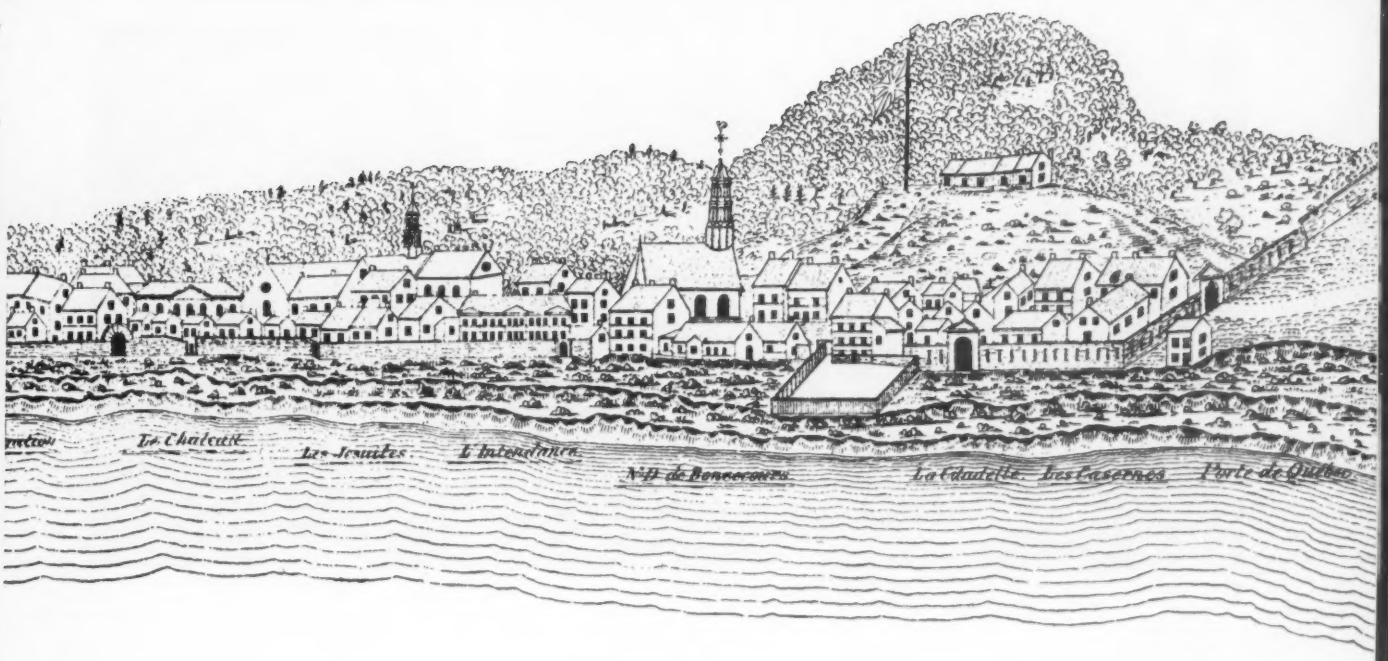


An esthetically satisfactory urban design cannot exist without a preconceived and orderly arrangement of vistas and their termination points, and without the interplay of urban spaces. In older cities, major buildings were powerful symbols providing needed points of climax and giving character to the surrounding areas. They also dominated the skyline and, in every civilization but ours, the city structure reflected the concentration of economic and political power. Today, a typical city is a vast, sprawling, and incoherent agglomeration of unrelated structures lined along a criss-cross of similar, traffic-choked streets. The inconvenience, ugliness, and boredom of such a chaotic cityscape is inevitable and there is an obvious need for the re-emergence of the art of urban design. What is less obvious is the way such designs could be implemented in our society.

An urban plan can be an abstract solution based on sociological or esthetic philosophies of the planner—a whimsical poem which disintegrates when faced with the multitude of problems inevitably present in a living urban organism. A plan having no base of economic reality and ignoring pre-existing conditions is doomed to failure. It is a tragedy of our times that the most imaginative minds of recent decades confused dreams with reality and proposed abstract patterns as workable urban solutions. The legacy of Ville Radieuse is still with us. Lucio Costa thus explains his design for Brasilia: "And now let us see how the plan was born. . . . It was born of that initial gesture which anyone would make when pointing to a given place, or taking possession of it: the drawing of two axes crossing each other at right angles, in the sign of the cross."

A realistic urban plan is a record of intended development, a guide towards immediate and long-range goals, and its aim should be to enable a city to develop to its fullest economic, social, and esthetic potential. Its inherent characteristics are flexibility and adjustability to changing conditions, and they should be attainable within the existing political framework. Planning necessarily involves controls and there can be no planning in a situation of complete laissez-faire; on the other hand, total planning can exist only under a system of social ownership or under a ruthless dictatorship. Assuming that one wants to preserve the system of private ownership and democratic government, the question which poses itself is: can a city, under such conditions, develop in an orderly fashion? The premise of the story of Ville Marie is that the answer is *yes*: that there need be no conflict between a profitable investment and the social need; that commerce is today the ruling potentate and a soaring skyscraper is the symbol of our civilization; that a healthy and beautiful urban pattern is essential for farsighted real-estate promotion—that, in fact, what is good for Zeckendorf is also good for Montreal. Be that as it may, the story of Ville Marie is an interesting example of a powerful impact on the economic and physical structure of a city brought about by an enthusiastic and imaginative team of city officials, property owners, real estate developers, planners, and architects.

The 22-acre site under consideration consists of three blocks owned by Canadian National Railways (CNR) and its history dates back to the early part of this century, when it was acquired by incorporation of railroad property **7**. CNR management realized, from the very beginning, the importance of the site and that for the benefit of the City as well as of the property itself, all three blocks must be developed together within the framework of a single master plan. This determination of CNR management to utilize the civic as well as the commercial potential of the site is evident throughout the site's history. Records show that as early as 1913 attempts were made to develop the property **1**. In 1929, another attempt was made. The new plan proposed, in addition to office and retail space, a Central Station to replace the old Terminal. Necessary legisla-

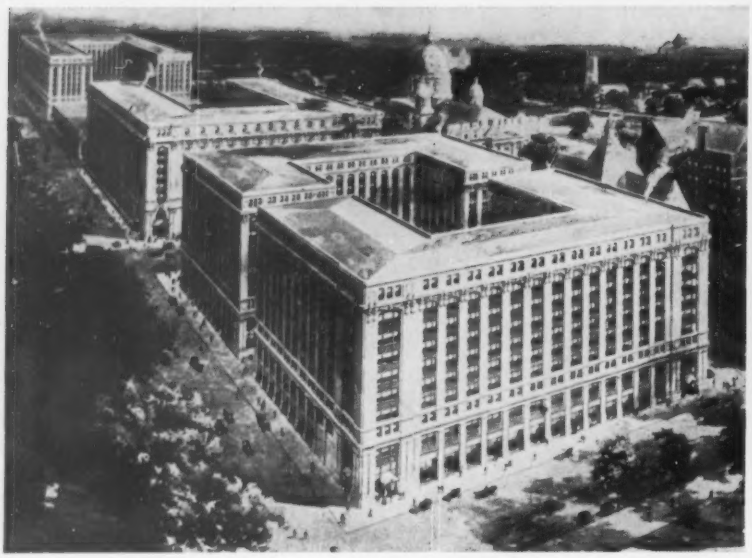


tion was passed and excavations started, but two worldwide disasters, the depression and World War II, stopped the project at its inception. By 1943, the station was the only building built. In 1945, Jacques Greber, a city planner, was consulted. It became clear that traffic would increase as the buildings went up on the site and an understanding was reached between the City and CNR officials, that the bordering streets should be widened. At this point homologation proceedings were initiated. In addition, CNR agreed to conform to an improvement suggested by Greber, and to reserve space on the north block for a plaza, which would serve as an appropriate termination for a widened avenue (McGill College Avenue) which links McGill University campus with the site. This concept is the key to the master plan as evolved by Pei's office.

Canada underwent an enormous postwar economic growth and during that prosperous period CNR proceeded with the realization of the project. By 1955, there were three buildings on the site—the Central Station and two office buildings—and a fourth building, a large convention hotel, was being started. As the economic boom continued, CNR management decided to reevaluate the plans and to complete the development of the property. A search was made for an organization strong enough to finance and build an urban center of the magnitude which CNR felt the site demanded. At this point, Zeckendorf entered the picture and found a situation of which real-estate developers often dream: a huge undeveloped site in the heart of a metropolis **6**. An intensive investigation of real estate possibilities began.

The path of business expansion in Montreal was readily apparent from maps showing land use and location of banks and office buildings. Commercial growth has thrust diagonally across the town and moved steadily northwest from the old city center towards the newer retail and entertainment areas. The CNR site was an empty spot on the map directly in the middle of this path of development. The inevitable conclusion was that the site had a great potential and could be exploited for retail, office, and banking facilities. Further investigations showed that during the twelve-year postwar period three million square feet of office space were constructed in downtown Montreal, a rate of 250,000 square feet per year. This rate was considered sufficient by local businessmen; there was no shortage of office space and it was believed that construction was in keeping with the rate of obsolescence and the natural growth of the city. Zeckendorf thought otherwise. His well known theory is that modern corporations need large areas of at least 20,000 square feet on one floor in buildings with considerable prestige. Average floor areas in Montreal were only 10,000 square feet and most buildings lacked the required luxury. Hence the decision to develop the site as a monumental group of buildings with a 1,500,000 square foot office tower as the main element. Webb & Knapp (Canada) Ltd. was formed and commissioned by CNR to prepare a master plan for the 22-acre three blocks and to design and construct buildings on the 7½-acre north block, which was to be called Place Ville Marie. Pei's office began the preparation of plans.

Montreal's downtown is wedged between Mount Royal and the St. Lawrence River. Traffic has no choice but to force its way through this bottleneck of congested downtown arteries **4.** Ville Marie would act as a magnet, attracting streams of vehicles and increasing this congestion. The planners realized that it would be disastrous if plans for an immense commercial center did not solve this problem and allow unhampered movement of vehicles through and around the site, and did not provide adequate parking facilities. Consequently, with the help of consulting traffic engineers, intensive traffic studies were undertaken which, supplementing and amplifying existing traffic studies made by the City, analyzed the extent to which land development would generate new traffic, the impact of



Courtesy: Canadian National Railways

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Photos (except as noted): Lionel Freedman

population growth and increasing car ownership, street widening, existing parking facilities, and proposed expressway systems. The knowledge thus gained of the expected volume and direction of traffic around the site, of required parking areas, one way streets and additional expressways, contributed to the shaping of the plan for Ville Marie.

It became clear that proper arrangement of one-way streets and no-left-turn intersections would help to alleviate present and future congestion, that the streets approaching and bordering on Ville Marie should be widened in accordance with the proposed homologation lines, and that all loading and unloading of freight and passengers should take place within the site.

The economic health of Ville Marie and the rest of downtown area also will depend on the smooth flow of traffic into and from the surrounding suburbs and the outlying regions. Even now this flow is seriously hampered by vehicles moving through the City's main streets on their way from one part of the island to the other. Studies showed that thirty out of every hundred vehicles in the mid-town area were just passing through and traffic-density charts indicated that there were already danger signals of approaching overcrowding. This demonstrated the need for a major ring road around the center of town which, providing easy circulation between different parts of the city, would drain off this dangerous through-traffic. The plan recommended, therefore, that the projected east-west expressway be part of a ring-road system and that a short elevated spur road connect Ville Marie through its south block directly with the east-west expressway interchange, avoiding interfering traffic by overpassing the existing CNR viaduct **4**. Spaced along the spur road would be several entrances and exits to the streets south of Ville Marie siphoning off traffic headed for the intersection. By means of this connection with the expressway, cars and buses arriving from the airport would reach the very center of Montreal in fifteen minutes, without a single stop. The plan further called for the east-west expressway to be extended to span the full length of the island, thus linking the downtown with the surrounding regions. Other cross-island expressways would form additional links, uniting the whole island into a co-ordinated highway system and binding it by many bridges to the surrounding mainland shores and to the regions beyond **3**. These studies emphasized the need for a regional planning authority to carry out this suggested regional network.

Movement of traffic within the site itself was solved by an underground roadway system connecting all major elements of the three blocks. Entrances and exits into surrounding streets have been placed so as to avoid crowding the thoroughfares and to enable service trucks and private cars to reach destinations within the Ville Marie complex without interfering with traffic on the surrounding streets.

At present in the 500 acres around Ville Marie, off-street parking lots have room for 6000 cars, and these lots will vanish as they are gradually supplanted by new buildings. Ville Marie plans allowed for more than 5000 parking spaces in three large garages on the lower levels of the multiplatformed structures, connected to each other and to the underground roadway system.

The middle block was already defined as Montreal's chief transportation center by the presence of the railway station and the hotel. The master plan proposed to amplify this function by developing the south block as a bus terminal, above which would be a 3000-car garage; the roof was designed as a heliport, to provide rapid access between the outlying airports and the downtown area. The middle block was to have—besides the existing railroad station, hotel, and two office buildings—additional buildings containing a trade center and four levels of garages. Elevated moving walks were proposed in order to give pedestrians quick, safe, and sheltered transportation. Detailed

First scheme **1** *for the site proposed in 1913. Pei's final scheme* **2** *(photo of model).*

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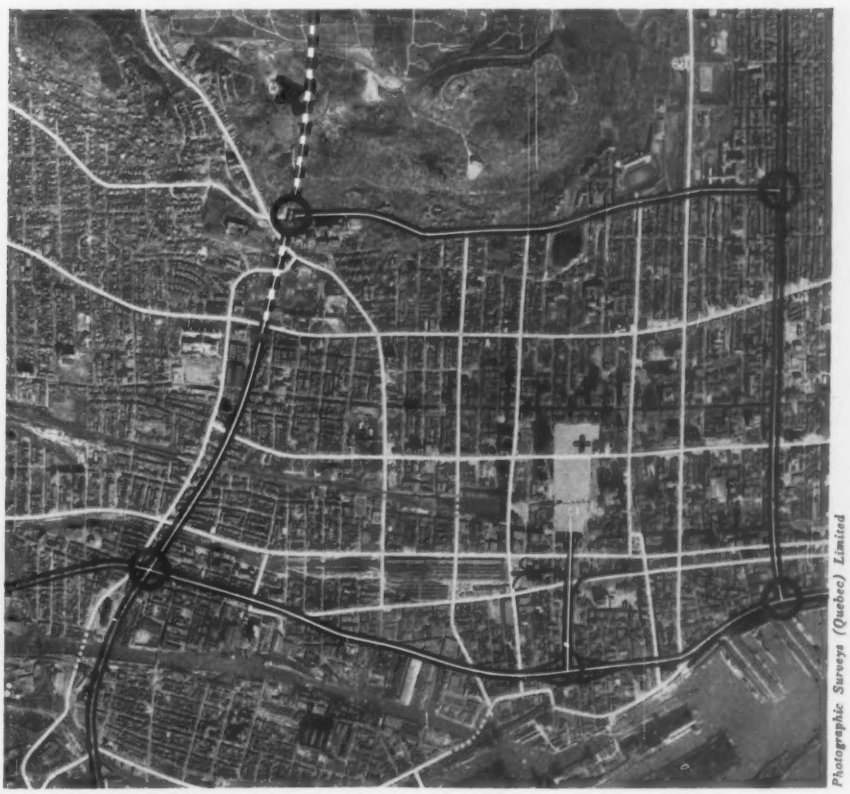

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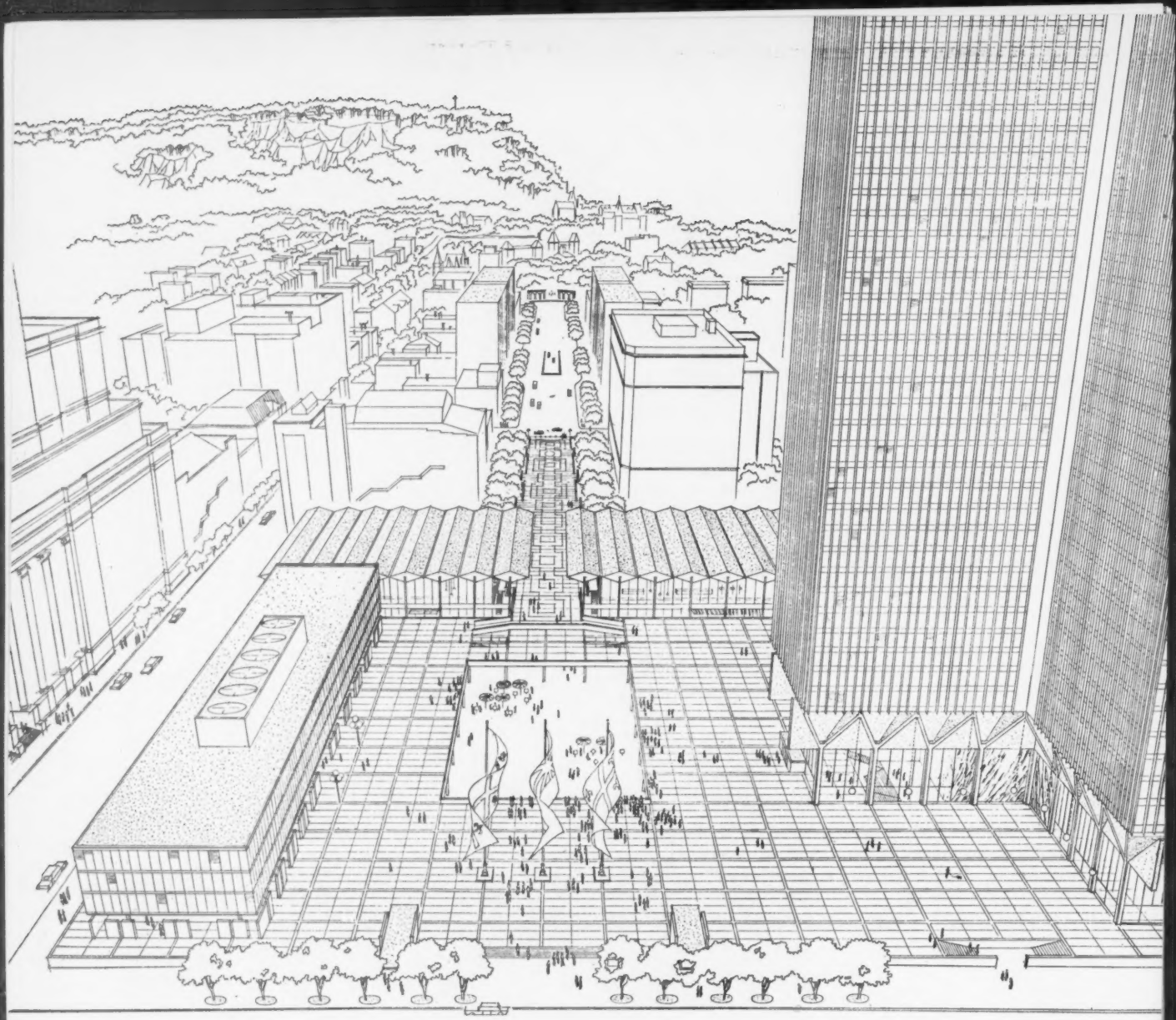
Photographic Surveys (Quebec) Limited

Map of the Island of Montreal **3** *and the neighboring regions showing the suggested network of expressways needed to facilitate rapid communication between the central core of the city and the suburbs, and among the suburbs. Heavy black lines indicate expressways to be in use by 1960; blue lines indicate suggested expansion; black dots indicate the location of the St. Lawrence Seaway. Aerial view* **4** *of downtown area showing the suggested ring-road system of expressways enclosing the central business district (in blue), the pattern of distributor streets (in white) and major interchanges (encircled).*



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6

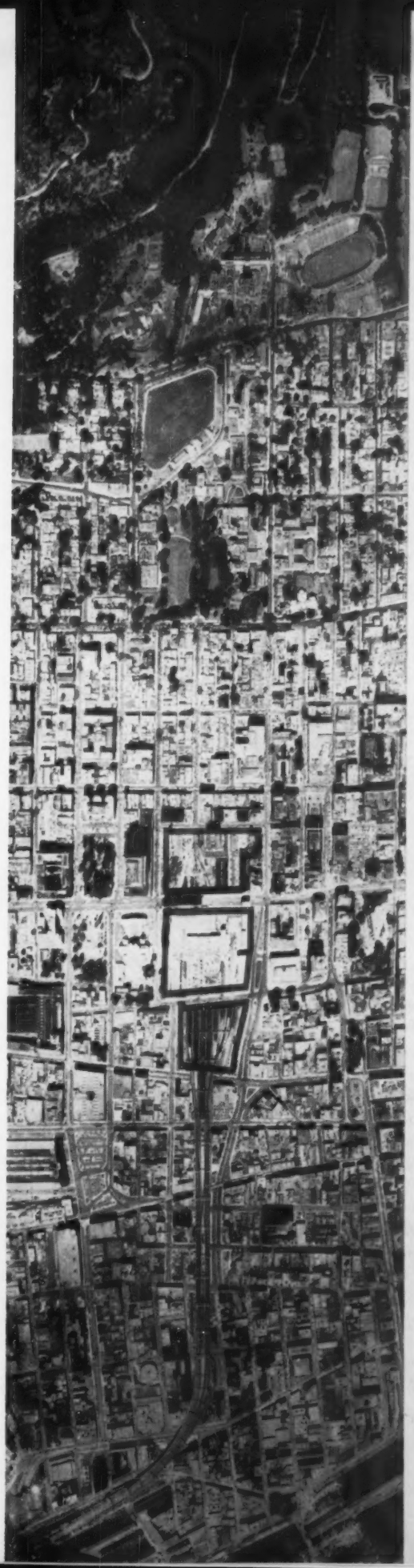
MOUNT ROYAL

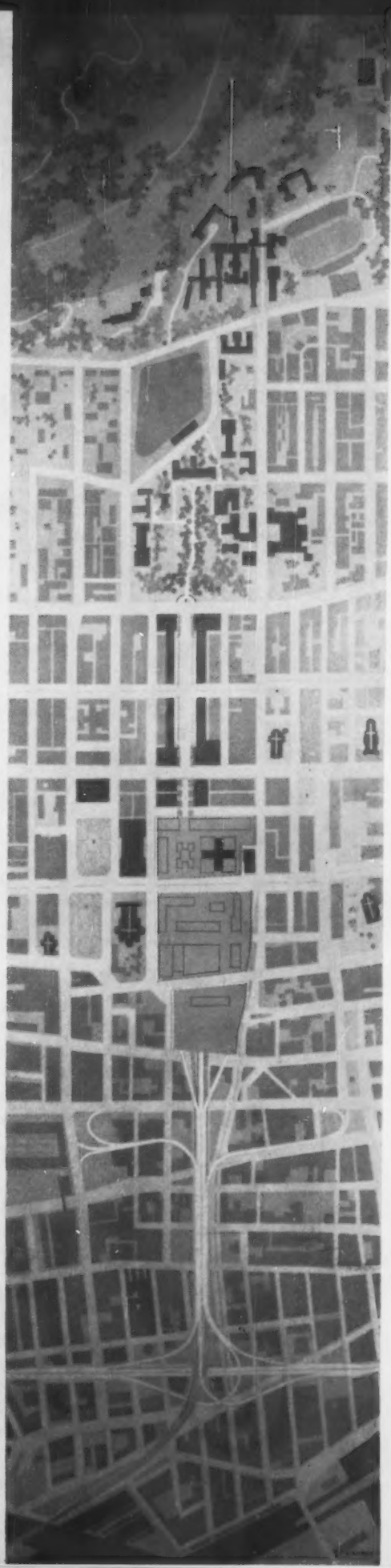
McGILL CAMPUS

NORTH BLOCK

MIDDLE BLOCK

SOUTH BLOCK





Sketch of Pei's preliminary scheme **5** *for the north block showing the plaza and the north-south axis. Photo mosaic* **6** *of the site (north block), looking towards McGill College Avenue and Mount Royal. Aerial view* **7** *of the site and the neighboring areas. Master plan* **8** *for the three blocks and the north-south axis.*

7, 8

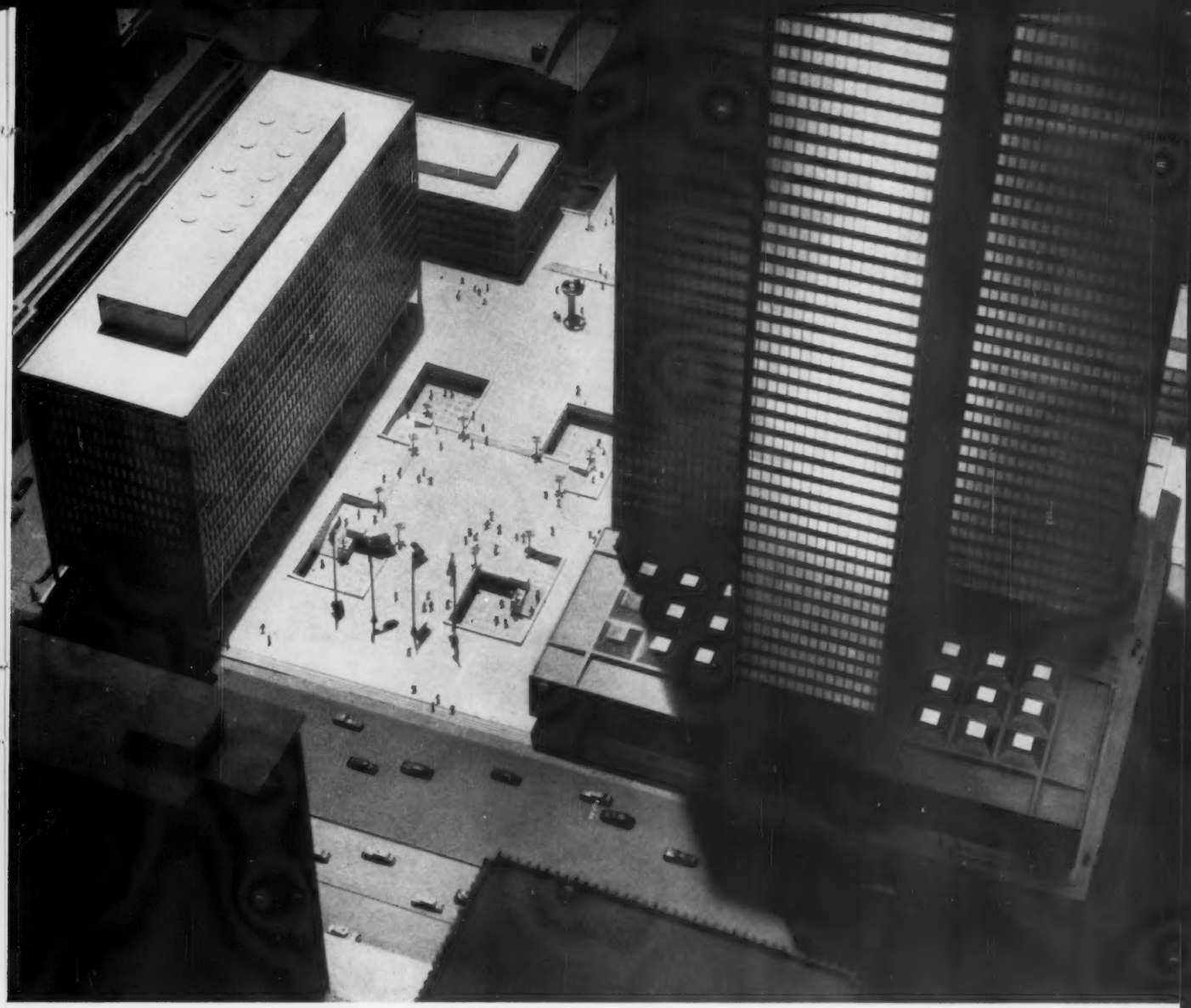
9

planning of those two blocks was the responsibility of CNR architects. At present only the middle block is being developed and a 600-car garage and another office building, instead of the proposed trade center, are under construction.

The north-block complex was designed in detail by Pei's office. Its most important element is the forty-story office tower sheathed in anodized aluminum and glass, whose cruciform shape derived from the desire to achieve an imposing monumental form in a building with large daylighted floor areas **16**. A square building of equal dimensions would have no daylight except at its periphery **14**. The cruciform design made it possible to have nearly all areas within forty feet of windows in a building which has almost one acre of floor space at each story **15**.

At the foot of the tower will stretch a large stone-paved plaza framed on the north and west sides by lower buildings containing retail areas at the plaza level and 420,000 square feet of office space on upper floors **11**. Additional retail areas (bringing the total to 77,000 square feet) are provided in the four corners of the base of the tower. Between them are four separate lobbies: the east lobby, near the offstreet driveway, is the major entry to the tower; the north and south lobbies are private entries for two major tenants in the building; the west lobby is the entry to the Royal Bank of Canada, whose 105,000 square feet of banking areas located in the four skylighted box-like structures forming the second and third floor of the base can be reached by moving stairs. On the north side, the plaza level is one story above Cathcart Street and will be reached from Ste. Catherine Street (present main shopping street) by a tree-lined mall which, overpassing Cathcart Street, extends the line of McGill College Avenue. Underneath the mall is the main vehicular access to the whole site and also pedestrian access to the next lower level, called the promenade level, which contains 130,000 square feet of stores and restaurants. The promenade can also be reached by underground passages from the station, the hotel, and the tower, and from the plaza by stairs located in each of the four wells.

Below the promenade are the first garage level and the roadways leading to the hotel and station in the middle block and to the second garage on the next lower level. Both parking



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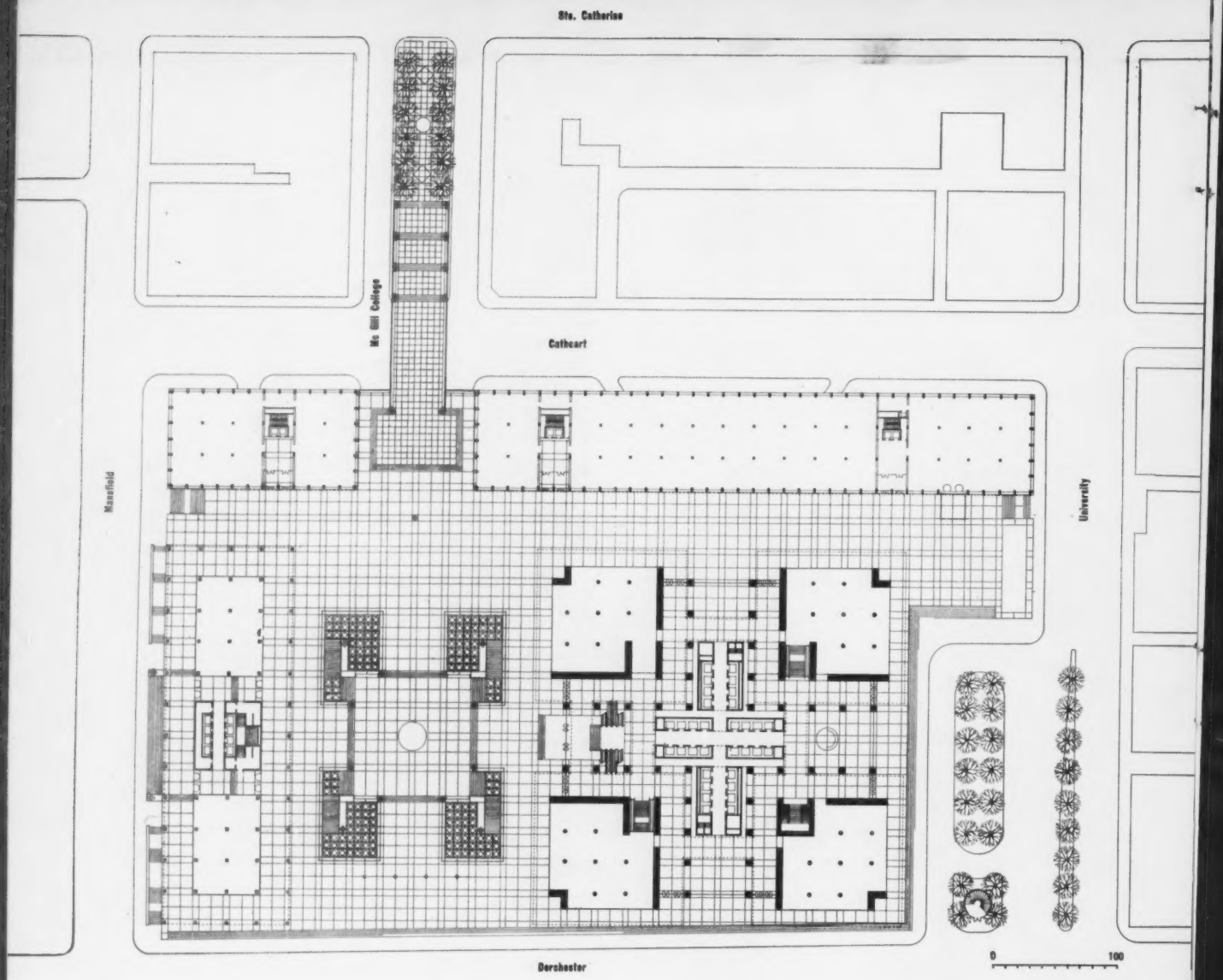
levels will accommodate 1500 cars. Further down is the last level, where the tracks of the railroad are located **17**.

It was estimated that Ville Marie will attract up to 60,000 visitors a day. The tower alone will have a working population of 10,000. This was one of the reasons for creating vast areas of pedestrian space throughout the project. The plaza was conceived not only as a circulation area, but also as a gathering point for large crowds; its function is to be civic as well as commercial. The four wells link the plaza visually with the lower level and thus the promenade can participate in the activities of the plaza **2**, **10**.

Planning of this project took three years. The architectural concept slowly evolved while the real-estate problem was clarified and throughout the traffic-study period. Although all known and predictable factors and limitations were incorporated in the preliminary solution, at this stage not one square foot of space was rented, nor a single tenant known. This scheme could be called a design thesis; a thesis rooted in facts, but also highly theoretical—a guess and a hope that a complete answer was there **9**. During the subsequent period of leasing negotiations the plans had to be modified until a final solution, based on an economic reality of having to satisfy the needs of the tenants, was reached. In the final scheme all the major tenants were known and space was allocated **10**. The degree to which the two schemes resemble each other was dependant not only on devotion to the architectural concept and determination to preserve it, but also on the thoroughness of the study of real-estate possibilities and on the validity of the original real-estate concept.

Final designs were approved in 1958 and construction began the same year. The project, which comprises 3,400,000 square feet of gross area and a total cubage of 42,100,000, will cost an estimated $75,000,000. At the moment, huge footings indicate the place where the buildings will rise. Completion is scheduled for 1961.

Once Ville Marie tower is standing on its plaza at the foot of widened McGill College Avenue, the new urban pattern conceived by Greber, emphasized by Zeckendorf and given further refinement by Pei, will become apparent. The multiple marriage of history, real estate, town planning, and architecture



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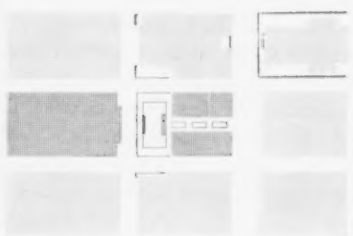

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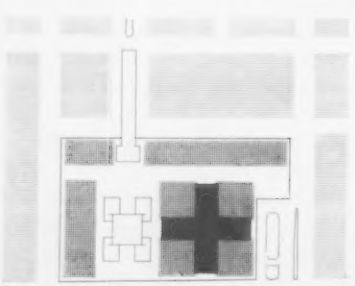

Plan **11** *of the plaza level. Comparative plans of Rockefeller Center* **12** *and Place Ville Marie* **13** *(same scale). Diagrammatic plans* **14, 15** *comparing daylighting in square and cruciform buildings (same floor areas). View* **16** *of the tower (photo of model).*

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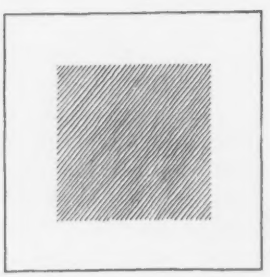
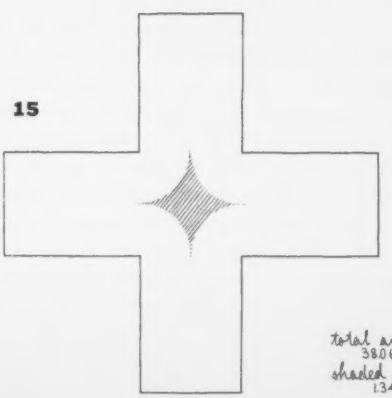


total area
38060 sq. ft.
shaded area
13390 sq. ft.

15



total area
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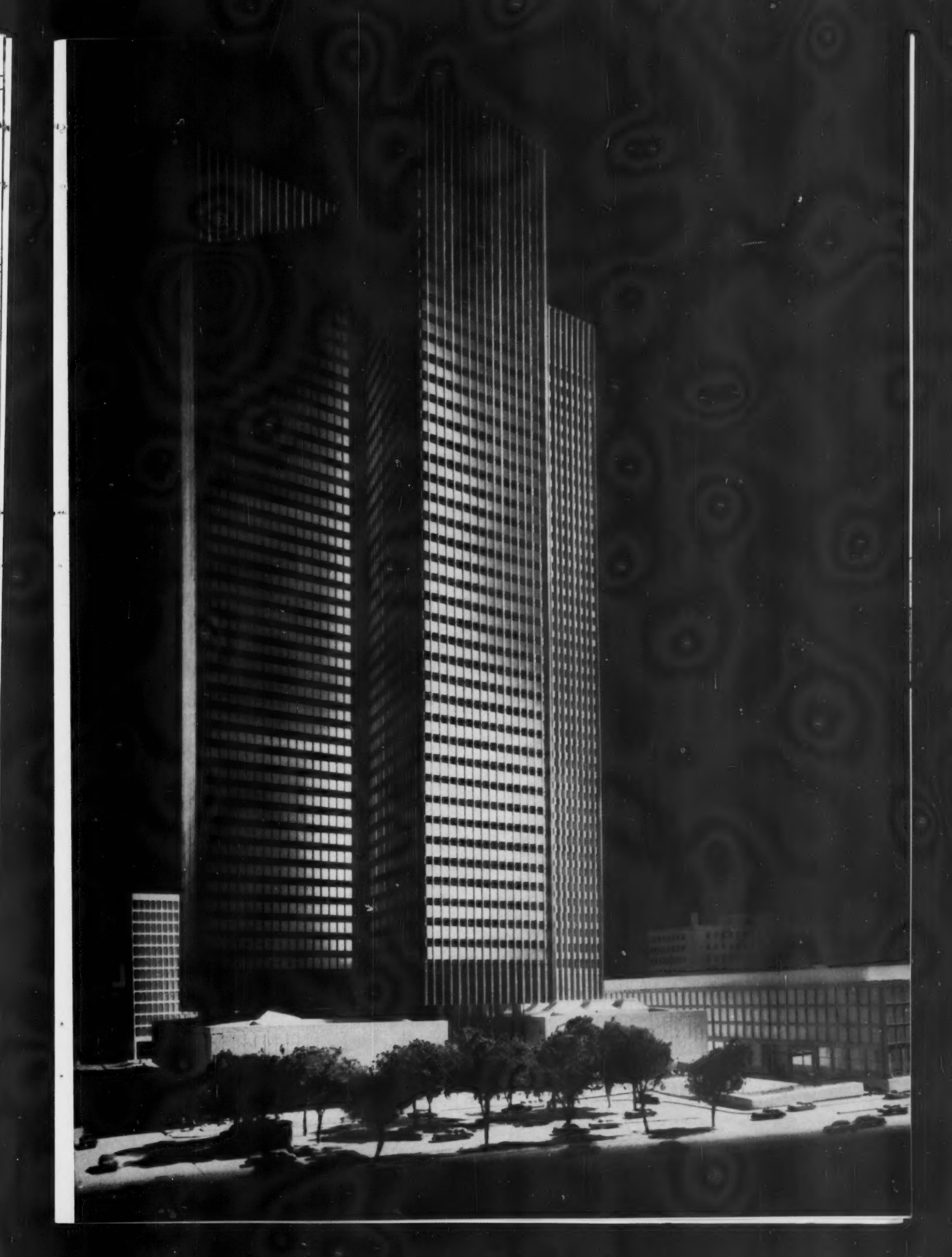
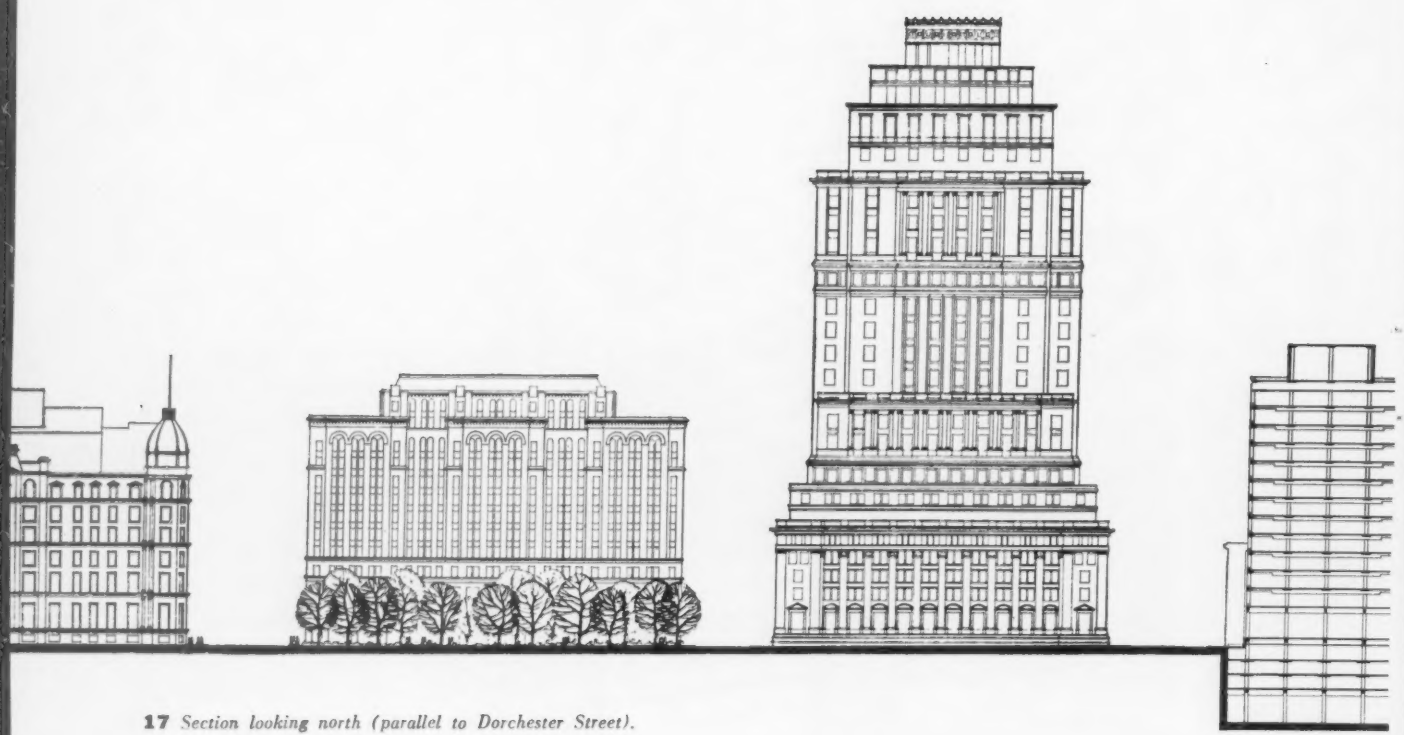
shaded area
1345 sq. ft.

16



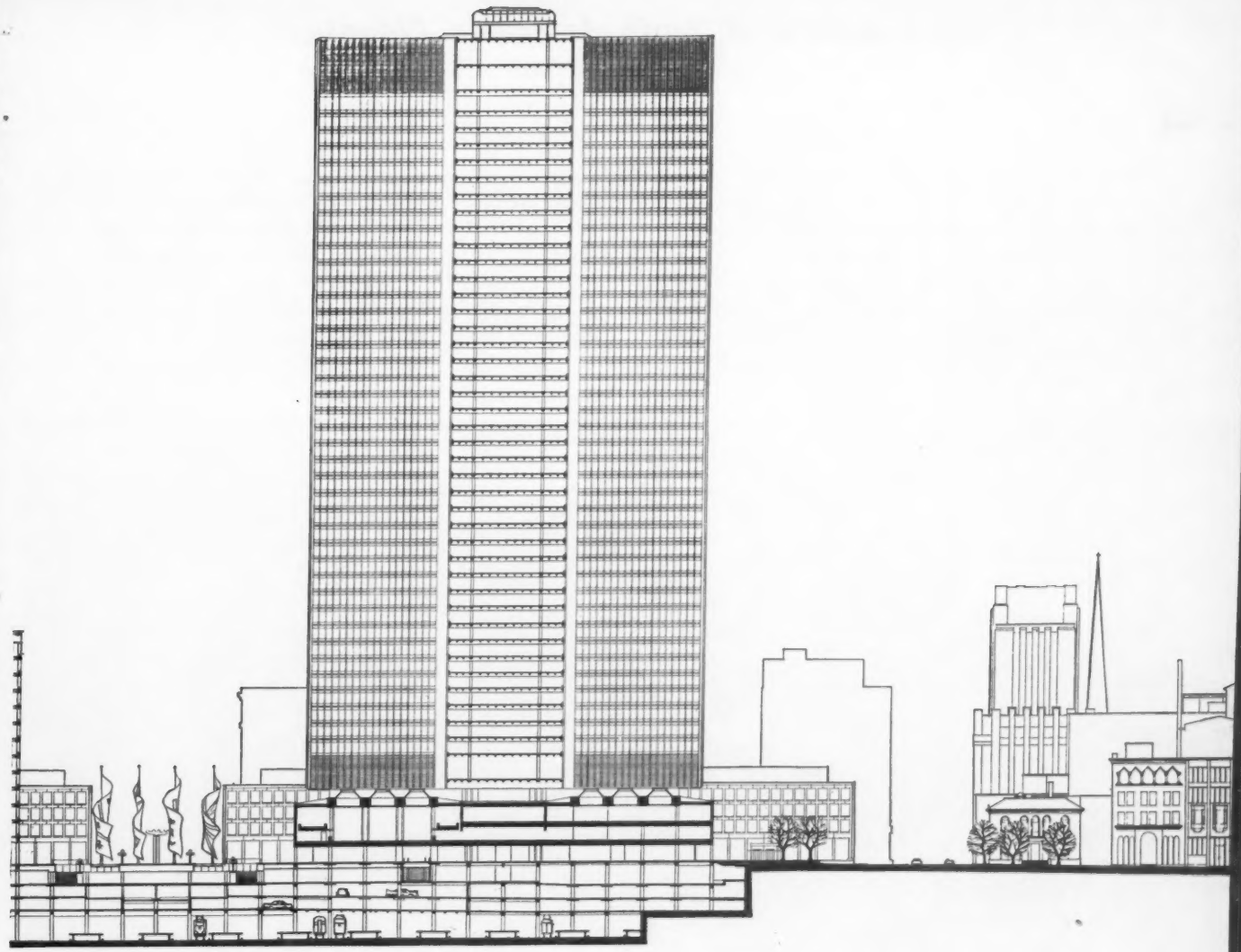


17 *Section looking north (parallel to Dorchester Street).*

will be consummated and the results clearly visible in two dramatic vistas of the new axial design. One will be seen when descending from the campus to the center of town; the view will be down the widened avenue and the new mall towards the plaza, as the formal termination point **8**. The other will be in the opposite direction, towards the soaring silhouette of Ville Marie tower, the steeply pitched roofs of the university buildings beyond the avenue, and the dominating summit of the mountain in the distance **5**. The avenue will be a link and a transition area between the formality of a mediterranean-type plaza and the romanticism of an Anglo-Saxon campus: a line dividing but also connecting the Gallicism of Montreal's downtown and the Anglicism of McGill University.

Zeckendorf's theory was proved correct shortly after plans for Ville Marie had been announced. Sudden demand for luxury office space prompted others to jump on the bandwagon and two more skyscrapers, each with rentable areas of more than one-half million square feet, will shortly rise within one block of Ville Marie. This means that in addition to the usual volume of construction, three million square feet of office space will be built at one time, an increment equal to the total construction figure for the twelve prosperous postwar years. All three skyscrapers will have banks as major tenants, thus proving and precipitating the anticipated shift of the downtown center towards the northwest.

The sudden burgeoning of this new urban mass will inevitably create many problems. Fortunately, Pei's planners and architects anticipated them: it has already been shown how some solutions were incorporated in their plans, others were submitted as proposals to the City government. One could argue that those proposals were cures for a malady which Ville Marie will only intensify and that there is no virtue in creating a



situation which would paralyze city traffic unless remedial measures were undertaken at great expense borne by the taxpayer and not the developer. One could also question the desirability of introducing into a city a new and alien scale which is contrary to the existing urban character. The validity of such arguments cannot be ignored. But what are the alternatives? Assuming that there were a superauthority empowered to make and carry out any urban-planning decisions, the Ville Marie site might have become a public playground, or a park, or a square with a triumphal arch in its center, or anything else dreamt of by the planners. It is obvious that such an idyllic approach to land-use designation is hardly feasible within our economy and system of government. The second alternative would be the conventional, lot by lot, commercial development, a haphazard accretion which until recently was typical of our cities. Such an unplanned and cancerous growth eventually results in urban decay, a flight to the suburbs, and complete disappearance of all urban qualities and metropolitan values.

The story of Ville Marie illustrates a third possibility: urban development conditioned by enlightened capitalism—owners, promoters, and investors cognizant that long-range investments are illogical unless urban problems are recognized and made soluble; that buildings do not exist in a vacuum but are part of a complex city fabric; that there can be no profit without commerce, no commerce without people, and no people without a stimulating and sympathetic environment; that what will bring the people into an urban core is not Madison Avenue, but good urban design; and that the limitations and sacrifices imposed by town planning are not detrimental to an investment, but are essential to its survival. The story of Ville Marie suggests that, even within the framework of our society, cities could have new life and drama and an exciting future.

Some Aspects of South American Planning

by Sibyl Moholy-Nagy*

"Only the architect can strike the balance between man and his environment." It is probable that Le Corbusier wrote this referring to the pre-destined modular environment of Cartesian skyscrapers and Unités d'Habitation, to "the hearth of tradition" on the 29th floor, and the brise-soleil ledge "such as Socrates advocated." Yet his sentence keeps flashing through the mind as one looks at the architecture and planning of South America. In all other fields—politics, finance, sociology, education—the most striking factor is imbalance, furnishing in fact the only discernable common denominator among the seventeen countries. Problems which are met (with varying degrees of success) by empirical rationality and detached analytical thinking in the northern hemisphere produce in the south responses of sheer feeling. This fervent emotionalism, lavished with equal intensity on

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Martin Chambi

the most grandiose and the most trivial problems, invalidates the distinction between Central and South America. It is as evident in Tia Juana as in Chile; it was as responsible for the rise of Fidel Castro as for Evita Peron.

Did the architects succeed in balancing individualism and environmental reality where all other leadership failed? Since Le Corbusier is the good and the evil genius, in any case the absolutely dominant influence on South American building and planning, his sweeping claim to supremacy of the architect provides a leitmotif for the evaluation of the architect's influence on South American environment.

Speaking of planning first and leaving individual building design to a subsequent article (APRIL 1960 P/A), even the most favorably inclined critic must confess to an initial irritation at a seemingly illogical approach to planning problems. It does not make sense to find Mexico City without legislation against skyscrapers whose foundations show like underwear because the ground on which they are built is sinking into the bottomless morass of a lake bed. Why academic showplaces of staggering dimensions and cost, in poverty-stricken countries that have no mandatory primary or secondary education? The magnificent seashore of Venezuela is shuttered and violated by hotels and apartment blocks of indifferent vulgarity, as if the Caribbean had no more to offer than Rockaway Beach. Cartagena's Boca Grande and Lima's San Isidro, on the other hand, are nightmares of gimmick spec houses straight from some film-comedy set. After a month or so of continuous visual intake and personal contacts, motivations become apparent which explain some of the contradictions. South American planners and architects are divided into two major groups. There are those who accept and love the paradoxes of their country, who are trying to balance man and nature on the fulcrum of their design. They are, to use an old cliché, the regionalists. The others are the universalists, who define architecture as manmade environment, deliberately planned on intellectual and technological resources, only.

It is likely that someone will say at this point: "Well, of course, the old contrast between Wright and Mies; there is nothing new about this." But the South American problem lies deeper. There is much more involved in this duality than a duel between the vital ranks of the Taliesin Fellowship and the aging phalanx of CIAM. The choice between environmental submission or environmental protest has been forced on South American builders since their earliest civilizations. It has been a choice of means for survival, historically evident in the contrasting concepts of Inca and Maya planning. The Inca Empire of the late Middle Ages, which was heir and pinnacle to successive Andean cultures, proceeded from total site integration and a maximum utilization of given features. The sacred city of Machu Picchu **1** in the most inaccessible part of the High Andes has a plan that prescribes for man-in-

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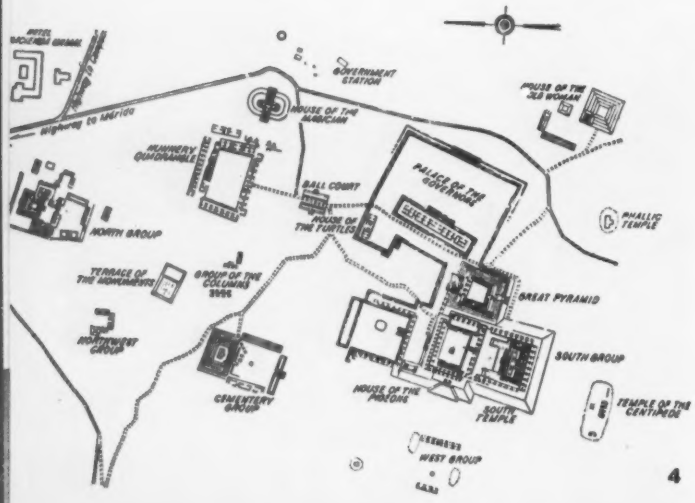
3 *Photos (except as noted): Sibyl Moholy-Nagy*



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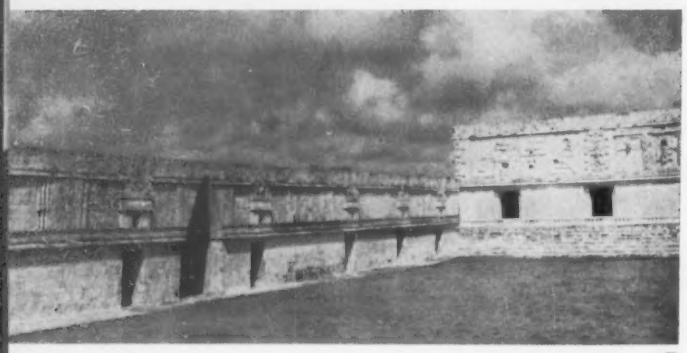

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motion a diagonal path implied by successive terraces. Instead of a monumental axis defined by symmetrical masses leading inevitably toward the architectural climax of a pylon or a cathedral entrance, there is a kaleidoscopic experience of the overwhelming mountain setting. The drama of natural environment is enhanced by the stark simplicity of the buildings which do not block the view but frame it **2** in a succession of carefully planned "miradores." Every Inca settlement had these connecting points between man and nature. Vista after vista unfolds until the High Place is reached out of devotional volition, and man confronts **3** "the place where the sun is tied" *above* the planned architectural experience.

The brutal grandeur surrounding the Inca site is not unlike the Pindus Mountains and those of the Peloponnesus. And, like the Greeks, the Incas distilled from their unyielding environment spiritual and physical sustenance: light and stone. energy and substance.

The Mayan peoples established their empire in the steaming jungles of Guatemala and Yucatan. Their only chance for survival was environmental rejection, the disdain of high intelligence and artistic genius for the uncontrollable chaos surrounding them. They are the first urbanists of the Americas—the Romans of a different age and continent, endowed with the same instinct for civic planning. Not Chichen Itza with its confused overlapping of original and eclectic structures but Uxmal, the *urbs* of Mayan Classicism **4**, is the proof of their universalism. All important buildings at Uxmal face inward toward clearly defined courts and interrelated spaces **5**. They are set off from the site by high platforms. Although the progression of movement is not axial, the gentle curve of access never loses sight of the ultimate goal—the Great Pyramids, closing this man-made universe of sacred and profane buildings with finality. The placement of the Palace of the Governor, laterally and obliquely related to the main plaza, adds splendid secular authority to this Forum Mayum without intruding on the religious climax.

The subliminal planning philosophy of the Inca and the humanistic one of the Maya was mercilessly destroyed. The conquerors acquired, with the land and the gold, environmental challenges for which they were not prepared. The self-destructive blindness that exterminated the very cultures that had come to terms with this deadly environment remains forever revolting; but one must admit a grudging admiration for the tenaciousness with which the Spaniards learned their environmental lesson in a murderous combat of trial and error. The flourishing cities of South America are today those established by the Conquistadores. Their success depended on the choice between utilization of intrinsic conditions or their exclusion. The plan **6** of Cuzco was laid out by the Inca rulers to serve their three state principles: public welfare, planned development and distribution of resources, and constant communication between the authorities. Only so could a state survive in the most inhospitable region of this continent. The Cuzco plan emphasizes centralized space for assembly and distribution of goods. The main roads of access "feed" the plaza from well separated angles. The residential section of the town core (II in the plan) is clearly set off by a narrowing of the open space toward the highest rise of the ground. The Spaniards retained the essential features

of the Inca plan. Official and residential areas are still clearly emphasized, with the additional feature of continuous arcading **7** unifying house elevations of strongly individualistic design.

It is unlikely that the word "neighborhoods" was coined before we had destroyed them, but the Spaniards insisted on their importance. The "Law of the Indies," issued in 1523 by Charles V, specified—among such planning items as prevailing wind direction, water supply, and chief lines of civic defense—a hierarchy of open spaces from the majestic "Plaza d'Armas" to smaller squares serving as commons for the family compounds arranged in patio blocks. Decreed by law, the colonial towns varied little. Yet within their established pattern they showed much imagination. Antigua in Guatemala, loveliest of the existing colonial capitals, included in its planned panorama Monte Agua, the beautiful volcano **8** that was to be the destroyer of the town. Dwellings and palaces maintain a hierarchy of site planning but both are submissive to the fireflinging giant. For each town core predicated on the site, there is another one denying with the passion of the conqueror that this is not Spain, such as the ringed town of Lima and Calao in a dismal swampland, or Cartagena in Columbia where the monumental fortress of San Filipe shielded the vice-regal city against the sea and the neighboring aborigines.

When the cargo from Europe changed from royal decrees, soldiers, and priests to speculators, engineers, and the collected writings of Le Corbusier, the old environmental dichotomy ceased to be purely empirical. South Americans lost the intuitive response to planning. They are still and always will be faced with the topographical, climatic, and ethnological problems that are too violent for environmental indifference; but the solutions show an increasing influence of European prototypes and theories. The phenomenal expansion of São Paulo—"The Chicago of South America"—produced a skyscraper crop **9** combining modular assembly with a highly emotional individualism. On lots so narrow and irregular that no intelligible street pattern can develop, grows a wild forest of concrete towers. Many have never been finished because their financing failed. The torrential rains reduce them quickly to ruins, but new projects are started on the narrow gaps between them as if this were a contest in self-assertion reminiscent of the towers of San Gimigniano.

Rio, graceful and shoddy like an aging courtesan, hides her

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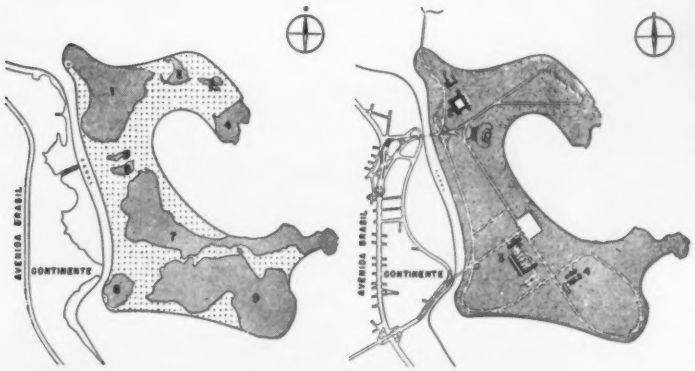
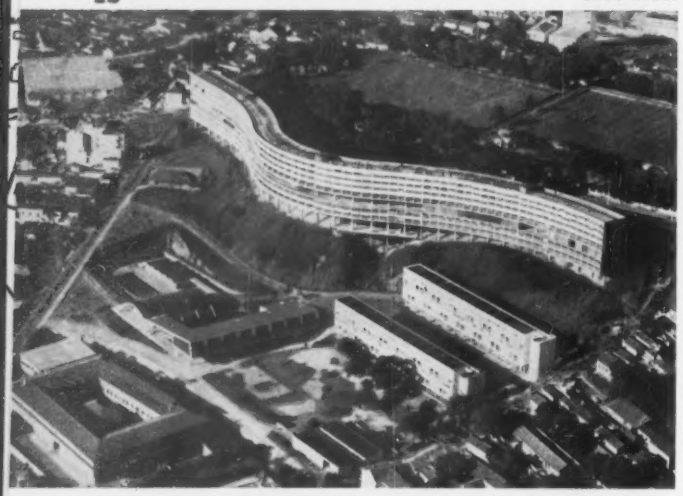
Foto Jerry

11 **12**



13 *Carlos Botelho*



Compañia Shell de Venezuela

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decay behind dreams of ever more artificial curves. The Miami nightmare of Copacabana is already written off. A new fill-in project proposes a new shore park for Guanabara Bay **10** that will carry the elegant Museum of Modern Art right out into the diaphanous blue. The bays of Rio are like an inexhaustible promise over which to forget the fate of the old quarters. Five islands are being combined **11** in one of the most extensive fill-in operations to carry a university city for 30,000 students **12**. It does not matter that the uncontrollable traffic congestion on the Avenues Flamengo and de Gloria will make access to the new waterfront park all but impossible, or that no funds are available to finish even the first two university buildings, not to speak of consolidating the vast new tract.

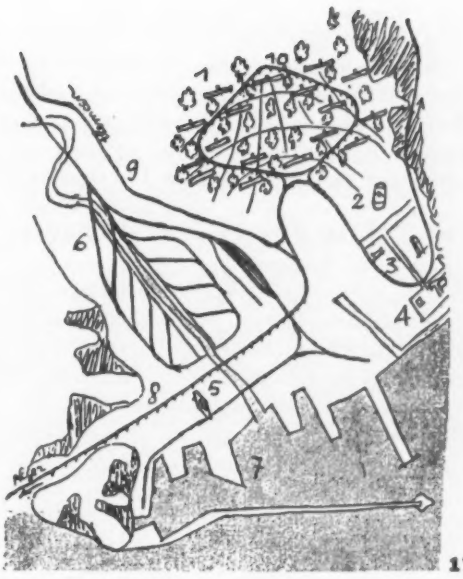
The devotion of Brazilian planners to the Rio shoreline as a work of art loses much of its effectiveness against the grim backdrop of the *favelos* along the mountain slopes, slums of indescribable squalor. The only attempt to make the poor of Rio beneficiaries of new planning ideas was the Pedregulho housing project—still unfinished after seven years because here, too, government support failed. The faultless curve along a slope, which would have been bulldozed by lesser talents than Reidy's, still delights and stimulates **13**. With a sense of personal loss, one regards this sensitive solution, which would have been such an infinitely better prototype for low-cost housing in South America, than Venezuela's government-sponsored projects.

The Venezuelan urbanists played with blocks on a gashed, violated site **14** which no amount of Mondrianesque color panels will cure of its desolation. Without giving credence to the sordid descriptions of life in these minimum flats, a sheer instinct for the clan solidarity of even the poorest Indian and his dependence on natural phenomena to direct his life, turns these boxes into jail blocks for the beholder. It seems particularly sad that the lovely valley of Caracas, with one of the oldest towns of Colonial Spain, should be the victim of "technological planning" in its most destructive form. The old town layout had as its most distinct feature large neighborhood sectors with their own names and character. When increased automobile traffic and population figures made replanning necessary, the consulting firm of Maurice Rotival dismembered the old town as if it were a corpse. Traffic speedways reduced the city to a thoroughfare, laying waste some 150 acres of its most valuable land and reducing the

16

rest to islands **15**. The bitter irony is that the total destruction was in vain: traffic begets traffic. With insufficient turnoffs and a single north-south axis, Caracas motorists prefer the residential streets which are completely impassable during the rush hours. The photomontage shown **15** was displayed a few months ago in the underground passage of the bankrupt Bolivar Center. It shows additional speedways superimposed on the existing ones, and a caption states—without a question mark: "How to get rid of the Octopus." A side light of this expert planning is provided by a deep concrete ditch for the river Guaire **16** accompanying the speedway like an open grave.

The regional utopianism of Rio's waterfront projects and the rape of Caracas and São Paulo by technological universalists provide such obvious lessons in unworkable environmental theories that it comes as a surprise to see these theories carried to further extremes in the plans for Brasilia. One could forgive Lucio Costa his dependence on Le Corbusier's innocuous urbanistic reveries **17** if his plan **18** and **19** had remained an ornamental argument. But it has been realized; the elegant doodle will decide the lives of half a million people and has already decided the plight of the Brazilian taxpayer. In a scholarly, objective analysis of "Brazil's Capital City" in *American Geographic Review* (July 1956) Prof. Preston E. James comments on the claim of the Brazilian government that the new capital will serve to develop the hinterland. He points out, and the accompanying map **20** shows that the new Federal District lies in an almost unpopulated area covered by savanna grass. The difficulty of raising crops in this unfertile soil has kept settlers away for more than 400 years. The attractions and easy working conditions of a new town will deprive the backland of even the few agricultural settlers it has, as is shown by the thinning of the hinterland population around the newly founded towns of Belo Horizonte and Goiás. "It is a mistake," writes Professor James, "to think that patterns of circulation and settlement can be created by administrative decree; geographical phenomena develop slowly, and once developed have a tendency to persist." If his analysis is true, and he offers scientific data to prove it, Brazilians will be left with the burden of supporting a giant administration compound in addition to raising the multibillion Cruzero costs to build it. Costa's plan provides along the monumental center axis an elaborate system of sunken and raised traffic lanes for heavy concentra-



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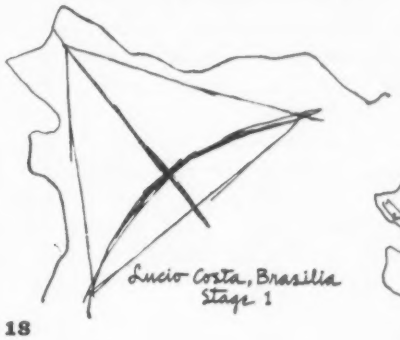

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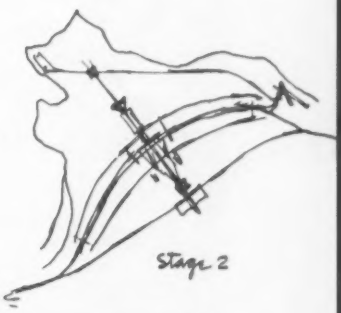

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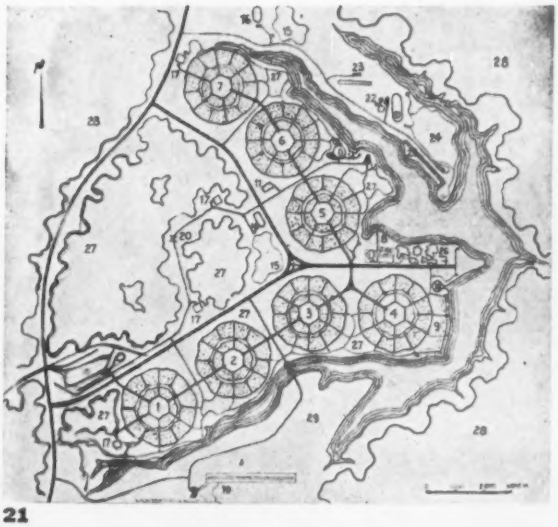

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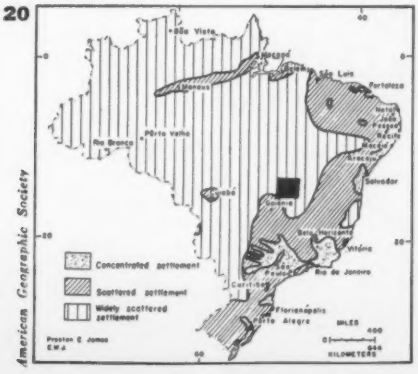

tions of vehicles. "The car . . . has been domesticated and is almost a member of the family." Yet the mass housing for thousands of government employes provides no garages, and a single bridge will link the north and south residential islands with the main city. It is obvious that either the multi-leveled traffic pattern is superfluous or the Rio nightmare of parked and moving cars choking the streets will be repeated.

The most thoughtful entry in the competition for the Brasilia plan **21** was by the Roberto brothers, accompanied (in contrast to the executed scheme) by a conscientious and detailed analysis of all social, financial, and topographical factors involved. It provides for clusters of population units with separate town centers and specific governmental functions **22**. Here the old pre-Columbian and colonial demand for neighborhood centers related to one supra-regional main center has been revived and modified. The positive aspect of this scheme lies in the maintained human proportion and "walkability" of the cluster units, in the identification of anonymous man with a clearly defined environment, and in the excellent utilization of the artificial lake in a truly democratic fashion. The objections are mainly psychological. An already introverted society of exclusively administrative character is in danger of developing further clannishness when welfare worker only meets welfare worker, educator only educator, and so on. The civic self-containment of each cluster has been carried to such extremes that the necessary social and intellectual cross-fertilization that makes a civilization might be lacking. Yet from a planner's viewpoint this is the inevitable sacrifice necessary to solve the much more dangerous problem of urban sprawl. In his article, "The Emerging Urban Pattern" (JULY 1959 P/A), Victor Gruen wrote: "We must abandon the gridlike arrangement characteristic of today's urban pattern. It will have to be replaced by a *cellular* or *cluster arrangement*, similar in structure to the organisms which nature has created and within which it has arranged everything from molecules and cells to the planetary system. Urban cells . . . in some cases may serve a single purpose and in others a multiplicity of purposes. . . . A number of them might be arranged around a working and business or cultural and social nucleus." The Robertos' clusters could have multiplied slowly as the new city established its reason for being, while Costa's dictatorial layout for half a million employes will paralyze its inhabitants by a permanent state of incompletion, by vast impassable spaces of stripped ground and red dust that do not connect but *divide*.

Santayana once said: "Those who ignore the past are condemned to repeat it." The anti-historical attitude of Brasilia's creators is taking bloody revenge. The Avenue of Sphinxes, the triumphal axis of Roman Cesars, the "ideal towns" of the Renaissance and the technological heavens of Le Corbusier's Vertical Villages rattle like skeletons over the 400-square-mile tract. When the President of Brazil endorsed these deadly clichés he turned his back on the long history of man's desire for an intelligible relationship with his environment—be it natural or manmade. This environmental ideal is indivisible and must benefit all parts of the town, or it is nothing. Neither the cold comfort of deified government symbols nor the beauty of an inaccessible natural paradise will resign the prisoners of old and new minimum dwellings to their homelessness. From this aspect, the modern planners of South America have not yet succeeded in striking a balance between man and his environment. It will be the intention of the subsequent survey of individual building design to discover whether the architects succeeded where the urbanists failed.

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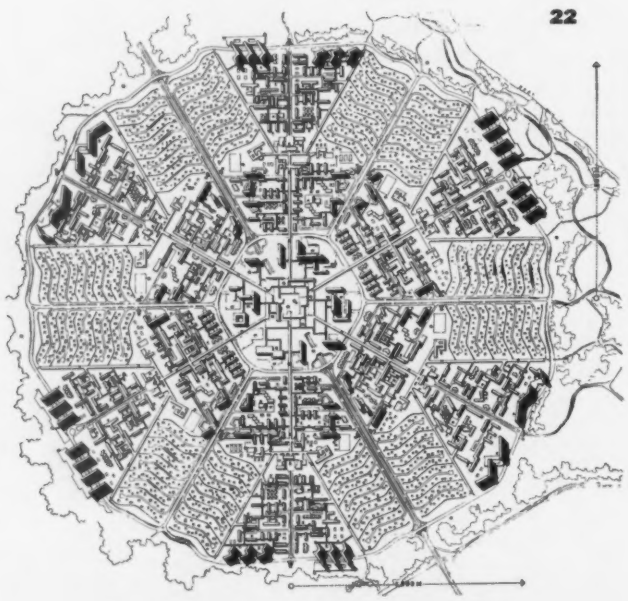
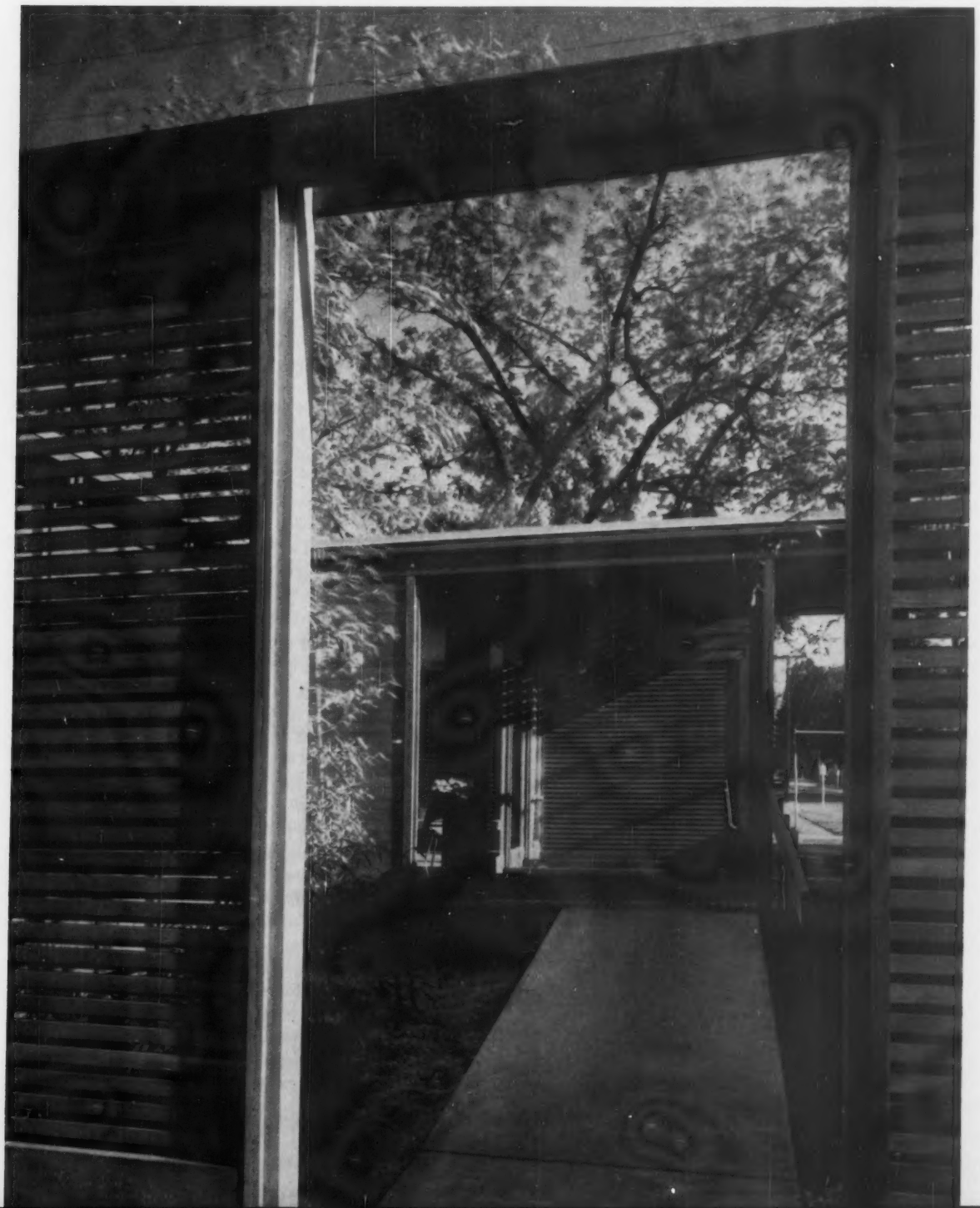


Fields of Practice: clinics

In the last ten years Paul Hayden Kirk, together with his associates, has designed more than fifty clinics in the Seattle area. In spite of this quantity, there is no stereotyped solution. Each problem has been solved specifically and logically — circulation particularly well resolved and native materials admirably used; but Kirk's interest goes beyond the merely practical solution of plan and structure — to the entire site and street picture beyond. In the following presentation Kirk describes his practice and four of his recent clinics.



"My office is most informal. I have never had a private office and feel that this is really correct in that everyone in the office is then cognizant of all matters of business and, therefore, has a basic knowledge of not only all jobs, but also a knowledge of the difficulties of making a business run. This also results in the entire office having an idea of fees charged, and the ethical standard under which the office practices.

"I have two associates. Don Wallace handles the routine matters of office procedure and is in charge of supervision and specifications. Dave McKinley assists me in design and helps to follow the jobs through the office.

"We have a small office—normally seven to eight men including the two associates—and we have found that it is best not to assign a job captain to handle the job in its entirety. Instead, one man is placed in charge of the working drawings for a particular job, and the design, in most cases, is handled by Dave McKinley and myself, with Don Wallace taking care of specifications and supervision. However, this varies. If someone lives near a particular job and has worked on that job, he is assigned the supervision.

"We encourage a cross-talk of design criticism, an analysis of jobs, and try to create office participation in a project. The longer I practice architecture the more I see that good architecture is that which is good in every detail and not just in the broad pencil aspect of free design. It is therefore essential that every man working on the job during all stages of drafting, specifications, and supervision have a proper feeling of esthetics and be in all senses a good designer.

"One procedure we have as office policy is: every Friday we spend the last hour in an office seminar and get-together when we have a drink and an opportunity to discuss our architecture. Sometimes we assign one fellow in the office to discuss a building of some other architect and do an analysis of the design problems and how they were met, or not achieved.

"As to the architectural design of clinics, I can point to no one thing that we have contributed, in any great manner, to an over-all design philosophy. Rather, I feel, we have tried, in most cases, to solve rather simple problems in a direct and economical manner, in order to stay within the very limited budgets that were presented to us. Of the fifty or so clinics we have done, only 20% have run over $75,000. This means that we have the same problem which we have in doing a small house; we must have a simplified office procedure and an economical solution to the problem, so that the building stays within the budget.

"I am convinced that the real challenge in any architect's practice is trying to do good architecture at the most reasonable cost. Our clinics in the past, starting in 1953, were being built for $14 a square foot. This price has gradually increased until we now find they are running about $19 to $20 a square foot for the same quality building. It would be very simple to make our present day clinics cost $25 to $30 a square foot by changing a few simple basic materials; but by so doing, it could easily make these ventures a poor investment for the doctor and, therefore, an impossibility for him to arrange financially.

"In the first conference with the doctor, I try to go over the problems, anticipate his needs, and arrive at a square foot cost of the structure and an analysis of his probable total investment. A case in point: I recently had a client who intended to build a 3800 square foot clinic which we estimated at $20 a square foot or $76,000. To this was added $7000 for site improvements, macadam, walls, walks, etc., making a total cost of:

Construction contingencies	1,500
Architect's fees (8%)	6,640
Sales Tax	3,320
Financing	1,000
Land costs	12,000
Total investment	$107,460

"Upon inquiry, the doctor had found that he would be in a position to borrow $80,000 on a 16-year (or 200 payments) basis. Therefore his annual payments would have to be as follows:

200 equal monthly payments of $400 (on principal)	$4,800
Insurance and Taxes, approximately 2% of total investment	2,400
Interest, 6% of half of loan, or 6% on own cash invested (difference between actual cost and amount of loan (27,460)	2,400
Total net annual cost	$11,248
Total square footage of building	3800 sq ft

"Therefore, in order to have this return on his investment he would have to rent the buildings at an annual rate of $2.96 per sq ft. On this basis, the occupants of this building would furnish their own heat, lights, and janitorial service. In this way, the doctor could see from the costs as outlined and the rental rate which seemed reasonable for that area, that his investment would prove sound; for in addition to the 6% return on his own investment, he would receive $400 a month increase in equity in a building as a future investment. One other way to approach this would be to take the equity increase of $400 per month, which was made possible by his original investment of $27,460 of his own money, and with this return of $4,800 per year, he would be making a 15% to 16% return on his investment from equity increase only. I have always felt this sort of an approach lays the groundwork, so that a doctor can see just what his own responsibilities, monthly obligations, and returns might be, before he becomes involved in architectural services.

"One of the most difficult problems facing an architect today is ascertaining that his owners can finance their building problems. Whereas the doctor referred to above was able to obtain an $80,000 loan, many times we have found (in connection with our clinics) that although the bank agrees to a ⅔ loan on total investment, their appraisal of replacement costs is only 80% of actual value, upon which they make a ⅔ loan, which results actually in a 48% loan to the doctor. To me this is a great inequity and I feel there should be some way possible for the architects as a group to convince the appraisers to come up with an appraisal that represents actual costs. Then, if the lending institutions wish to lend 50%, they should announce it as a

50% loan instead of this reverse procedure which leads an owner or investor to believe that the costs he is facing in building are 20% greater than the bank will recognize as replacement costs.

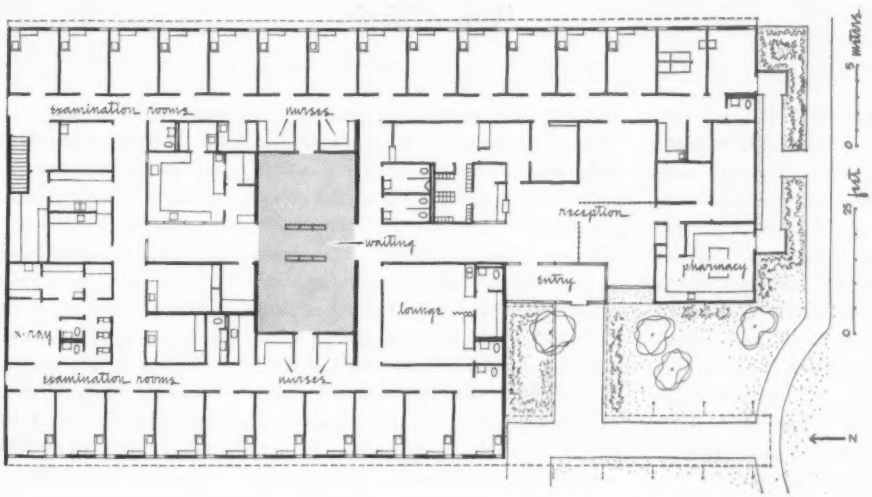
"There is no doubt that the most economical type of clinic building, as of any building, is one allowing a single central corridor, having accessible rooms on both sides, and forming a long rectangular block. Although this is a very limiting factor, if a budget is extremely tight, there is no justification for an architect to impose more wasteful planning in order to achieve a purely architectural effect. However, as the clinics become larger and more complex, other arrangements become feasible as to the relationship of space traveled by personnel vs. plan arrangement.

"A clinic, as any other type building, must be a sound and efficient tool to enable the doctor and his staff to work as efficiently as possible and still provide the feeling of comfort and convenience to the patient. Therefore, if the patient does a little extra walking, it is not as critical as a nurse having to do this 40 or 50 times a day. In larger clinics, it is essential that patients do not wander through work corridors without being directed by staff personnel.

"Our buildings are usually built on wooden floors with a cemented crawl space under the entire building, so that future additions or new installations requiring outlets or electrical services can be easily made. Wooden floors are also springy and more comfortable for personnel standing on their feet all day.

seems to make one a specialist, and I am sure a great many doctors rely upon this in choosing an architect.

"As to my thoughts regarding a specialized practice, I would sum them up this way: an architect's basic training is such that he is taught to analyze any building he is commissioned to do on the basis of the amount of traffic into and within the building. In this sense, any new commission is mainly solved under principles that are used in all his work so that specialization from that standpoint is not necessary. I really feel the basic problem with specialization is that an architect begins to feel that he has the pat answers and does not approach each new project with the freshness and directness that he would, were it an entirely new and strange commission. How-



"In some of our clinics, such as the Group Health (which is a large group clinic for ten doctors), the waiting room was placed in the center of the building and patients are directed to it from a reception area *(see plan)*. This waiting room is placed so that nurses' stations can command the area and, because of the short traveling distance, can call the patients and conduct them to the doctors' offices. The other alternative of a waiting room at the receptionist point, where the nurses then have to walk a great distance to pick up their patients, becomes overly wasteful of nurses' time in larger units.

"Acoustics and sound control have become a more and more important part of planning clinics, and we have found it most advisable to consult with acoustic experts.

"In all of our buildings, we have tried to maintain a complete service where we either do, or help directly with the landscape architecture and also consult and help the doctor in the selection of interior furnishings and colors.

"There is no doubt in my mind that one reason I have had so much clinic work[1] is due to the book that I wrote with Eugene Sternberg.[2] The written word, especially when published in book form,

ever, I can readily understand that to an outsider the appeal of going to someone to do his work who has already done many buildings of the type he wishes, would be more comforting; he would feel that the minute details that make a building easy to live with would be more readily solved. This, nevertheless, does not always produce the greatest architecture and so my comments are more along the line of what results in the best architecture."

[1] *Until three years ago, clinics accounted for 50% to 60% of Kirk's practice. Today they account for only 10% to 15% of a diversified volume of work.*

[2] Doctor's Offices & Clinics. *Paul Hayden Kirk and Eugene D. Sternberg (Reinhold Publishing Corporation, New York, 1955).*

Pero Clinic

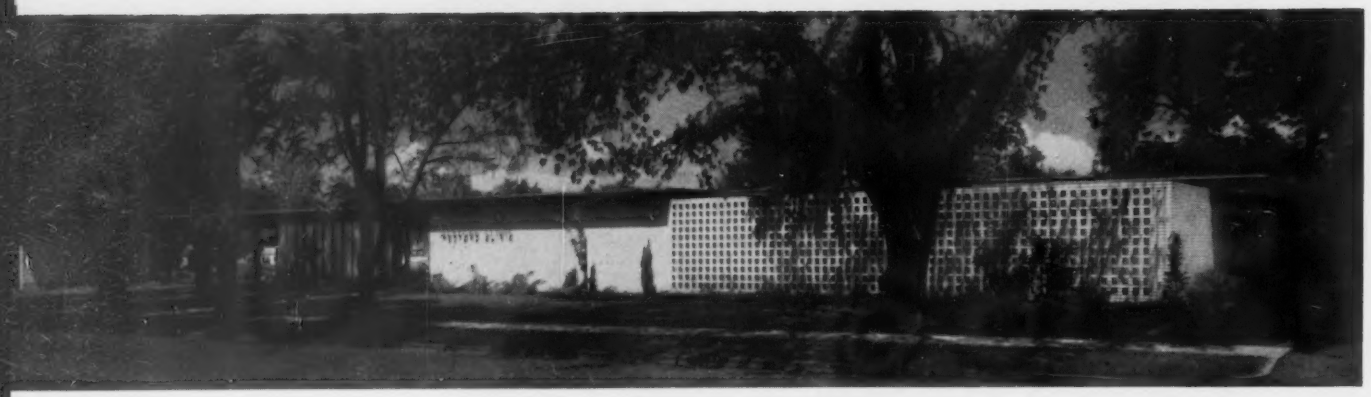
This clinic provides each of five doctors —two orthopedic surgeons and three general practitioners—with a private suite. In addition there are a rental suite, an X-ray and laboratory suite, and pharmacy, mechanical equipment and an employes' lounge in the basement. Space-requirements dictated the two-level scheme; the upper floor made conveniently accessible by ramp from the street level. An open-air gallery provides access to the various suites. Most expeditious use of the site for parking purposes placed the building on a north-south axis. "Being convinced," explains Kirk, "that eastern exposure would be more desirable than western, we were able to arrange all examining rooms to the east and thus maintain a simple elevation with some degree of control." All except the structural members of this east elevation are of honeycomb reinforced-plastic panels. "Esthetically it is a very handsome product and when lighted at night the building is most stimulating." However, it has been found that too much heat enters the building during the summer months and it has been necessary to add a sunscreen to the east façade to prevent this overheating. "Due to the warm summer of two years ago, we are now designing all of our new buildings with provisions for either immediate air conditioning or future air conditioning." The building is heated by a gas-fired, warm-air furnace; each doctor's suite is individually controlled. Foundations of the building are of reinforced concrete, the structural members of steel or wood. Exterior wood surfaces are stained a dark brown; exterior stucco is white. The total cost of the structure amounted to $141,000; site and landscape work $10,000; cost per sq ft for the 6700-sq-ft building area was $19.50.

Stern & Towne, Mechanical Engineer; Odegard Construction Company, General Contractor.

PRESCRIPTIONS

0 5 feet 0 3 meters
UPPER FLOOR
medical suite
waitg
storage
prescriptions
parking
north
LOWER FLOOR
mechanical
street side

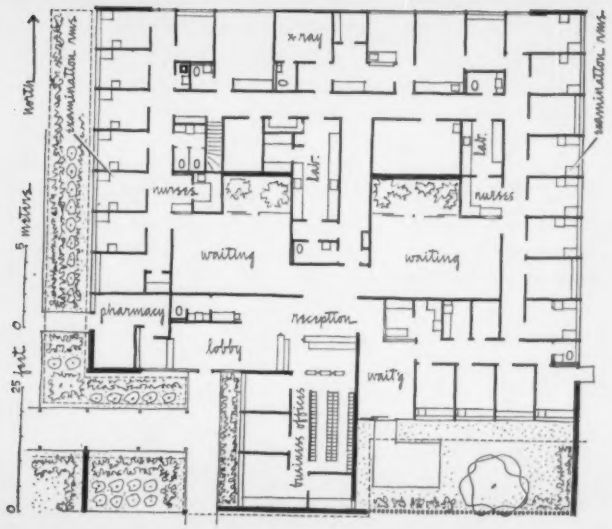
Because of the slope of the site, the parking area and first-floor level of the building are 5 feet below street level. A handsome wood stairway on this east façade (acrosspage) *provides access to the upper floor. Other entrances are on the north* (top) *and the south sides of the building* (above). *Examination rooms* (right) *receive pleasant diffused light through ¾" thick plastic-surfaced, honeycomb-cored panels. Interior partitions are sound deadened by staggering 2" x 3" studs, by providing a 1" quilt in the walls, and by using acoustic tiles on the ceiling. Most of the interiors have neutral wall colors and terrazzo-patterned vinyl-asbestos floors.*



Medford Clinic

This clinic was designed for a group practice encompassing eight doctors of various medical specialties and their manager. The program required that a central receptionist direct the patients to one of four general waiting areas: one for a pediatric suite which also has an outdoor play yard and emergency entrance; the second and third, controlled by one nursing station, to service three to four doctors; the fourth, a separate waiting area for lab and X-ray patients. Two of the waiting rooms open onto small private courts. "The courts," writes the architect, "prove quite delightful with a stone wall receiving the south sunshine and taking the stigma off an enclosed, dark, central waiting room." A small pharmacy, near the main entrance, was incorporated into the plan for the convenience of the patients. The orthopedic-surgeon suite connects directly with a minor surgery and cast room and the laboratory area is so arranged that specimens may easily be taken and shots administered to patients by laboratory attendants. The building is completely air conditioned and a covered walkway and deep trellis protect the west examination rooms from the afternoon sun.

The structure is a wood frame with raked joint brick veneer walls laid in light mortar. The same creamy white brick was also used to form a grill which opens onto the children's play area. Exterior wood surfaces are stained dark. The building is lighted by fluorescent fixtures and acoustically treated throughout. It is also thoroughly controlled by an intercommunication system and a signaling device of color-coded lights. Jack A. Edson was Associate Supervising Architect; Stern & Towne, Mechanical Engineer; Dwight Seely, General Contractor.


north
25 feet
5 metres
x-ray
examination rooms
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waiting
pharmacy
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nurses
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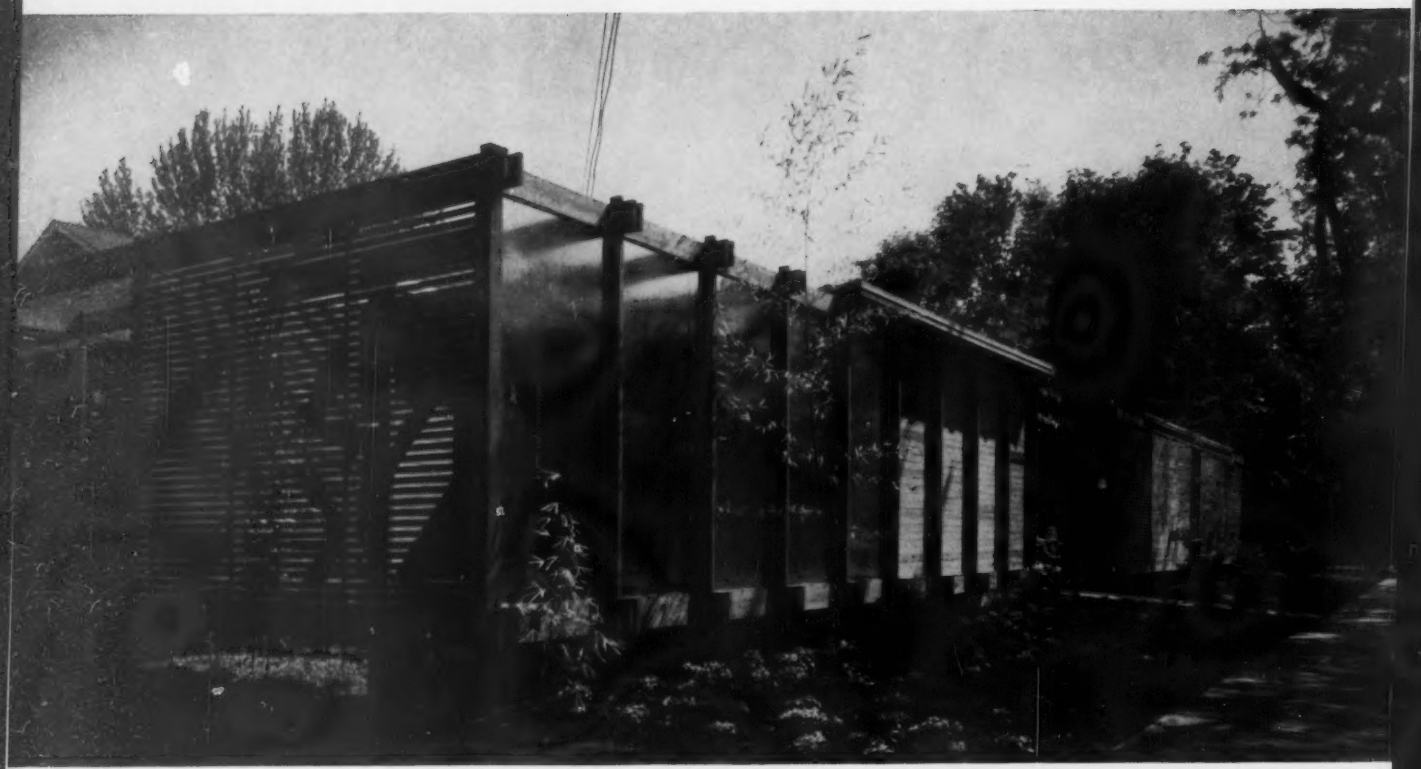
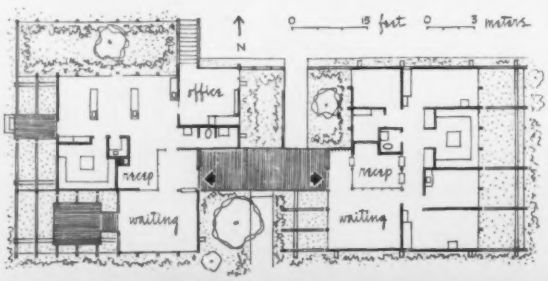
business offices

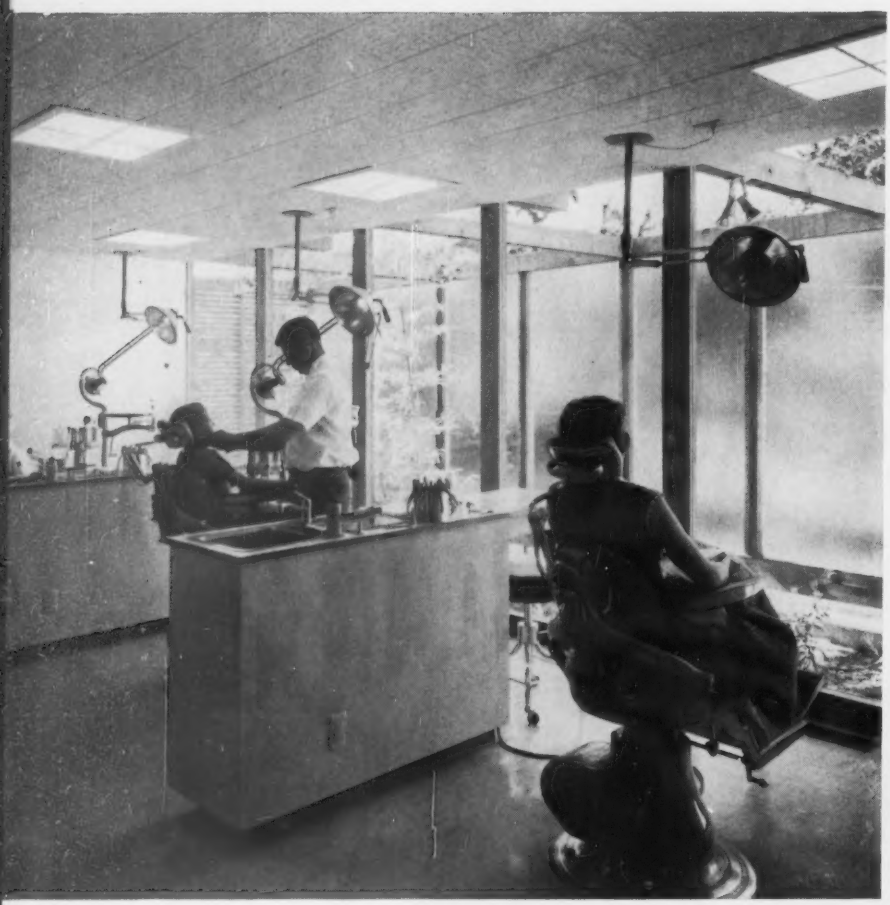


McNair Price Clinic

This clinic, also in Medford, Oregon, was designed for two dentists practicing individually—one a general practitioner, the other an orthodontist. The building is the first stage in the development program of the corner site. For the present an existing house will remain on the property until the need arises for additional clinic space. "With the lovely shade trees on the site," writes Kirk, "it was felt that a simple expression of a building in exposed wood siding and framing members would give the desired warmth and interest and enable the buildings to blend more intimately with the garden planning. Both units and entry courts are framed by private gardens which the doctors and patients unanimously agree are great fun. The gardens, though planted very simply, do create private areas and tend to break up the severity of a building that might otherwise cover too much of the site." Of additional interest are the layouts of the actual work areas where, in the general practitioner's clinic, office and operatory have been consolidated, and in the orthodontist's clinic, the operatory space has been left entirely open. The structural system is a wood frame in which the studs, floor and roof rafters have been exposed on the exterior of the building "to modulate the wall areas and provide a rhythmical texture." All of the wood exterior has been stained a warm khaki brown—the only accents are the muted colors of the doors. Interior colors are off-white with neutral floors—colors in the waiting rooms recall the accent colors of the doors. A small basement contains the air-conditioning and heating equipment.

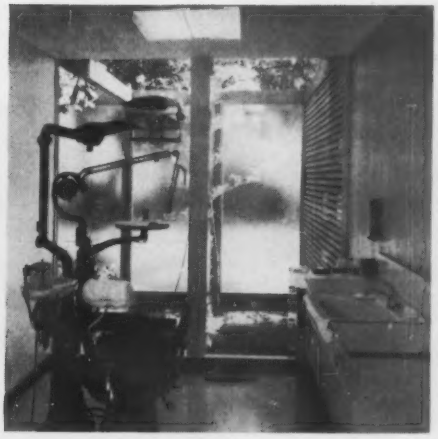
Jack A. Edson of Medford, Oregon was Supervising Architect; Stern & Towne, Mechanical Engineer; Paul Hayden Kirk & Associates, Interior Design and Landscaping; Myers D. Smith, General Contractor.

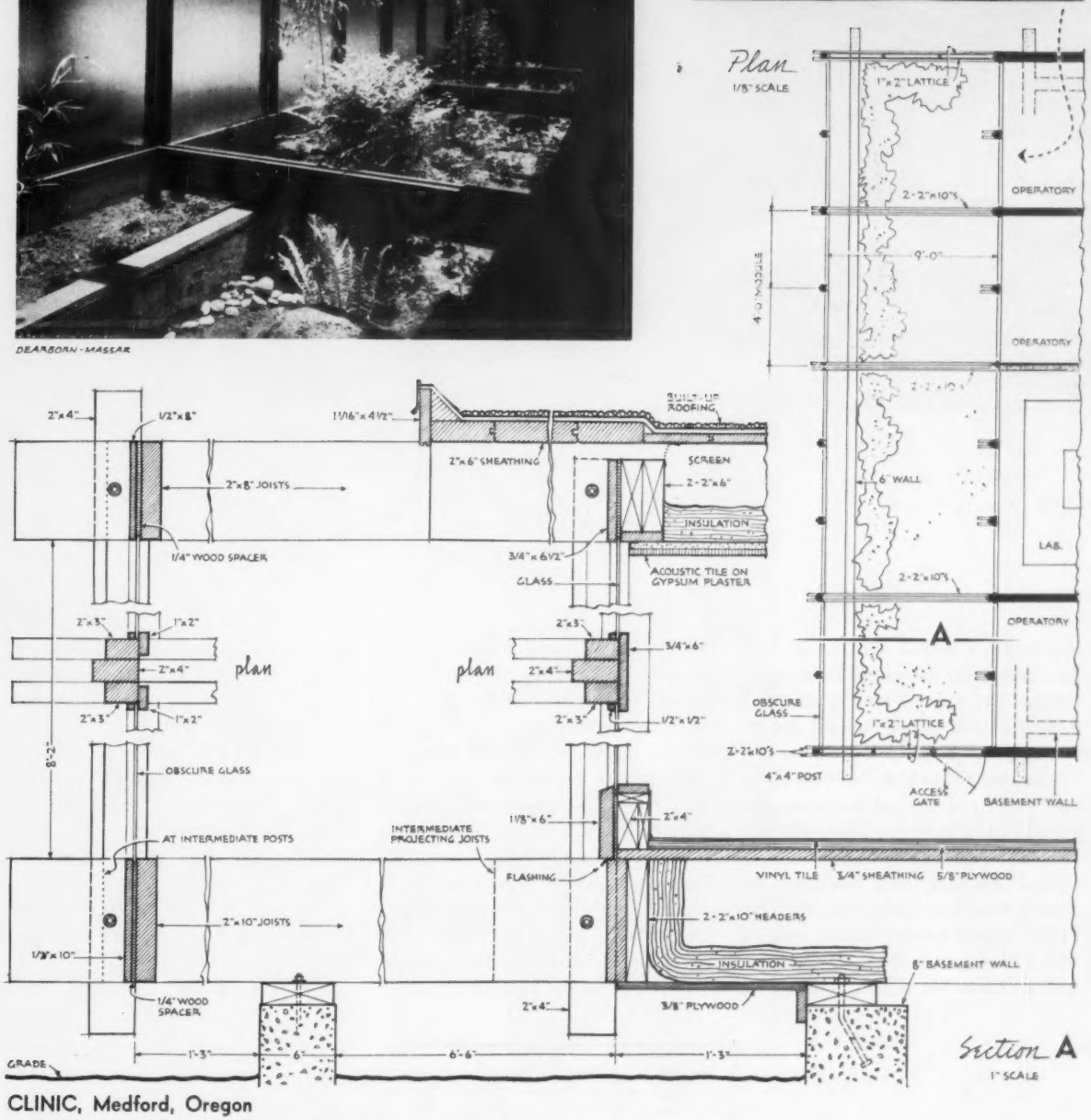




The orthodontic clinic (above) *is one large space subdivided only by specially designed work counters. Dental chairs face a pleasant garden. Another interesting departure in planning occurs in the general practitioner's suite* (right) *where the business office and "operatory" have been combined into one consolidated space.*

DEARBORN-MASSAR



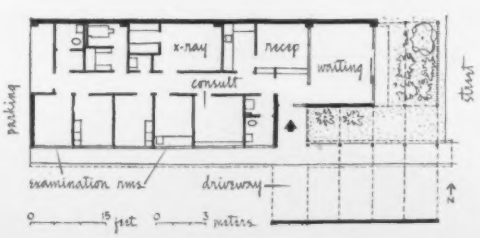


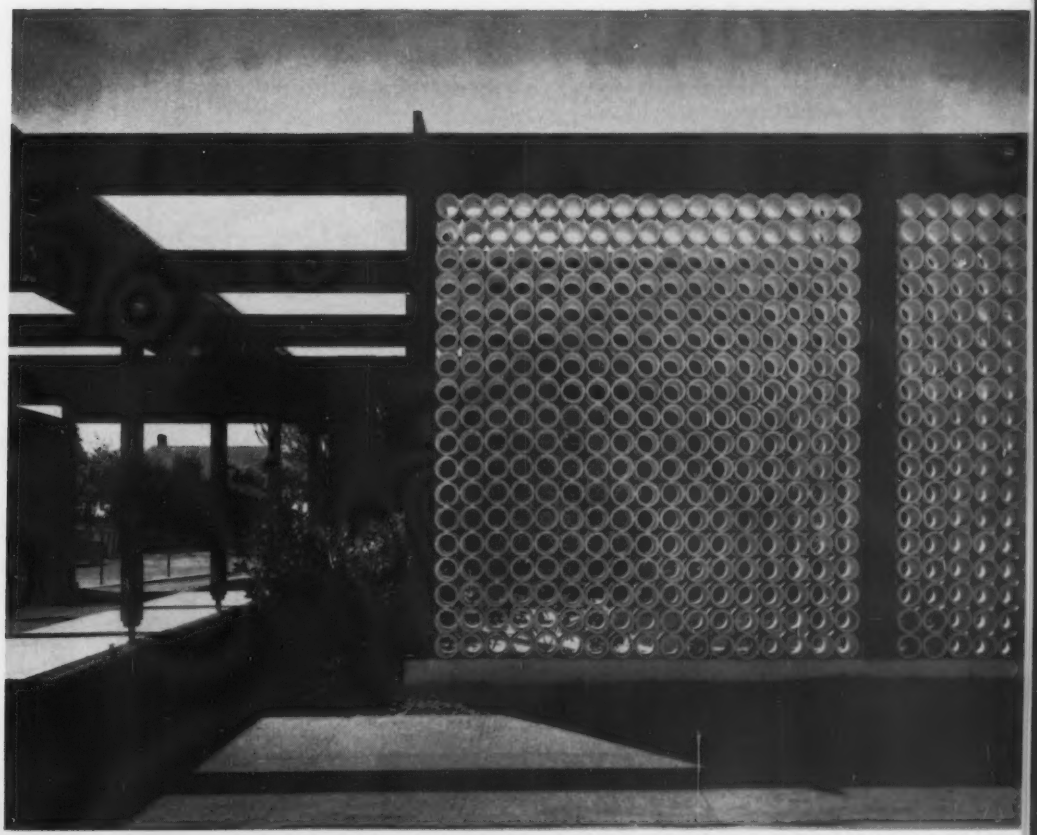
CLINIC, Medford, Oregon

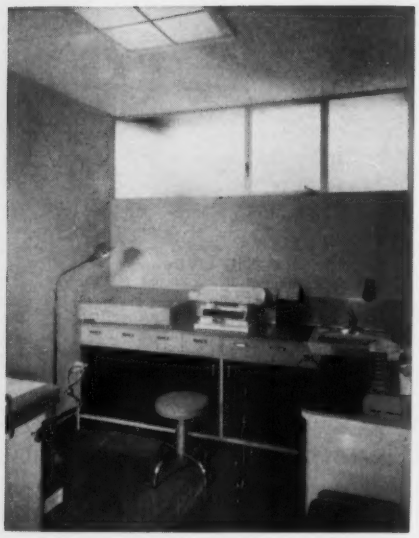
Paul Hayden Kirk & Associates, Architects

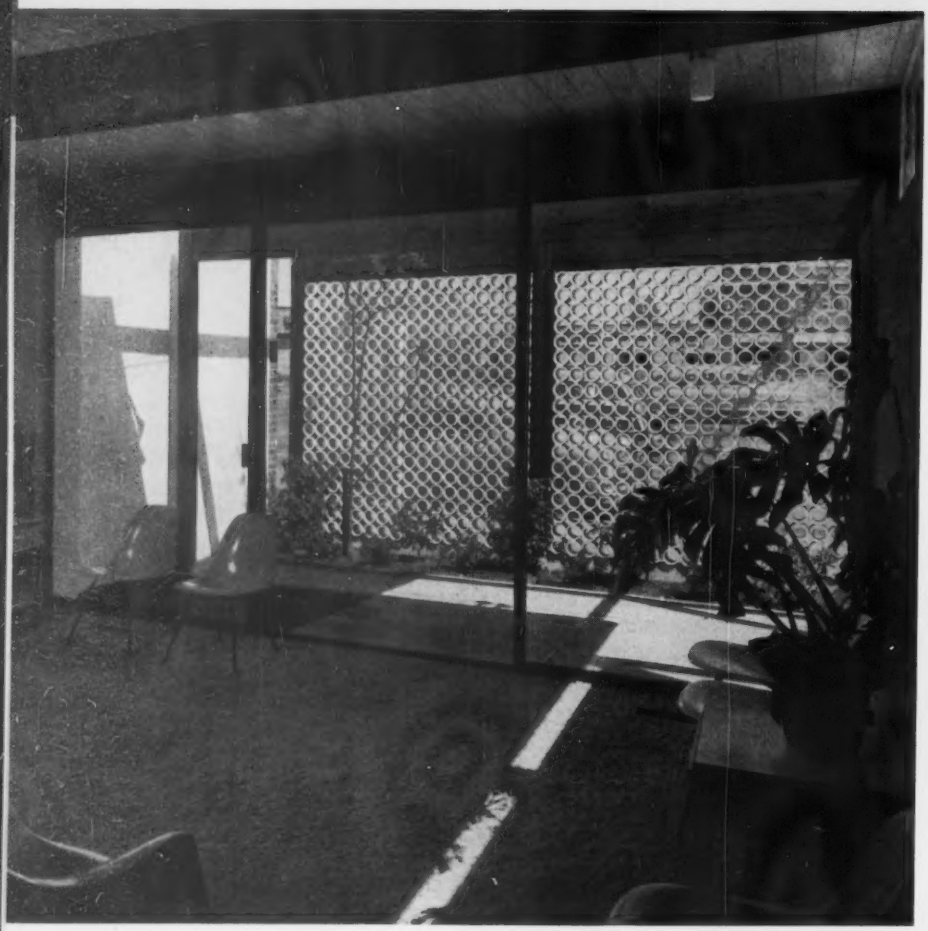
Smith Clinic

One doctor, a general practitioner, occupies this clinic located in a suburb of Seattle. The site measures 40′x128′ and is in the midst of a business district where parking problems are severe. "Therefore," writes Kirk, "a rather elaborate trellis and covered entrance area, extending to a party-line brick wall, was devised as an entrance motive with a pierced drain-tile wall screening the waiting room from direct street visibility. In this manner we were able to create a little 12 feet garden off the waiting room, and a chance for a little greenery in this drab surrounding." A deep overhang serves as a covered passage for patients coming from the parking area. Since the clinic had to be placed directly on the property line on one side, this space was given over to X-ray room, dark room, furnace room, laboratory, and business office—the latter two daylighted from the top. The opposite side is occupied by four examination rooms and a conference room. From the reception area, patients are directed either to the waiting room or directly to the clinic. "The structural system again is frame with a typical detail of a wood joist floor and crawl space system over a 1½-in. skin-coat concrete slab. We feel this to be the advisable type construction, rather than concrete slab, for it not only makes more comfortable working conditions for nurses and doctors, but actually provides an area where extra utilities or services that might be needed in the future, can be easily run and extended up to the walls to the required locations." Total cost of the 1500-sq-ft building with site work was $26,500. Stern & Towne, Mechanical Engineer; Raun Construction Company.



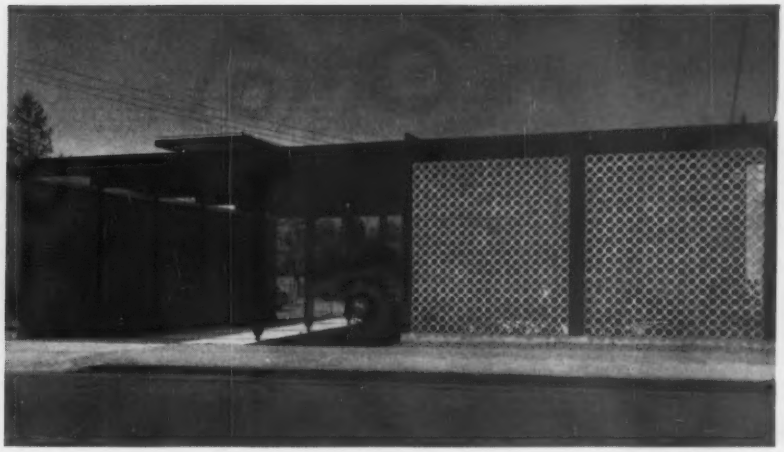




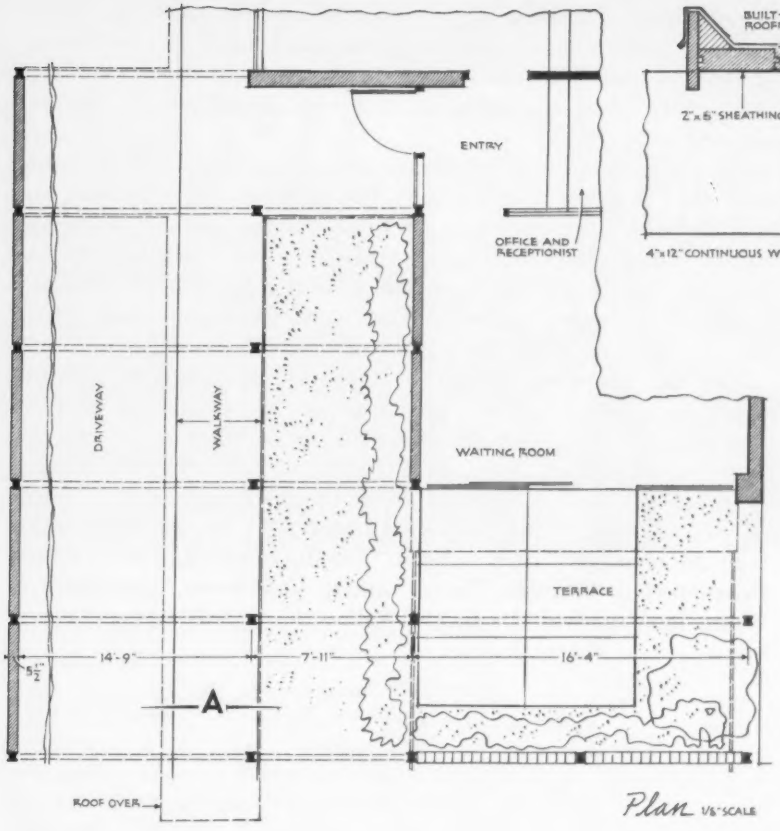


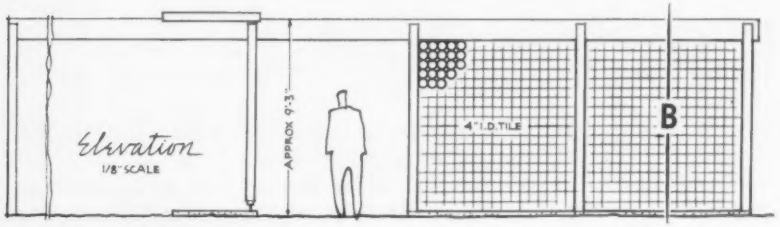
Waiting room and reception space are so planned that a private conversation at the reception desk cannot be overheard in the waiting room. On the other hand, the receptionist can visually supervise the waiting room as well as the front door and clinic corridor.

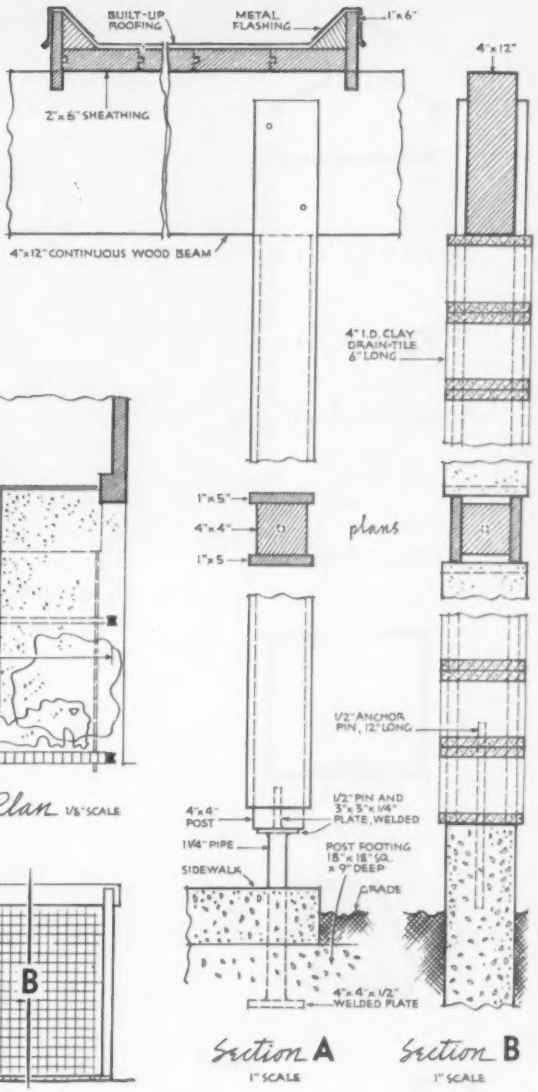
wall screen



DEARBORN-MASSAR

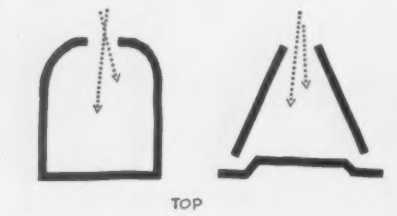


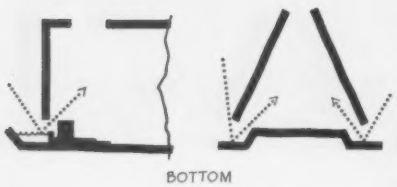


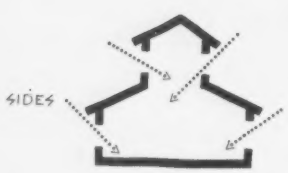


CLINIC, Seattle, Washington
Paul Hayden Kirk & Associates, Architects

churches

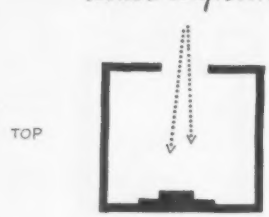


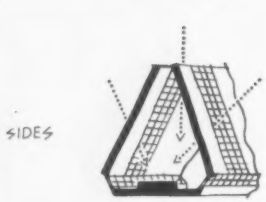




general lighting

altar lighting





Natural light in churches

One of the architect's most effective design tools is light, or light and shadow, which reveals forms and textures and, even more important in church buildings, helps to create a spiritual atmosphere. Lighting plays a crucial role whether the church interior fosters contemplative withdrawal, as in the MIT chapel; or emotional mysticism, as in the Ronchamps chapel; or is open to clear daylight, as in recent Finnish and German churches.

The diagrams (*left*) illustrate several ways of admitting light into the worship space: light for general illumination and emphasis lighting to focus attention on the chancel. The designer must also, of course, give careful attention to the amount and quality of light—determined by size of windows, height of windows in walls, relation of window to wall space, the use of stained or clear glass.

On the following pages, we present three churches, illuminated in three different ways. For the congregation of First Christian Church, Minneapolis, Minnesota, Thorshov & Cerny, Inc. provided low, unilateral lighting; the chancel is side-lighted. For the congregation of Dewitt Church, New York, New York, Edgar Tafel provided high and low bilateral lighting; the chancel is back-lighted. For the congregation of Christ Presbyterian Church, Terra Linda, California, Campbell & Wong have provided window walls; the pulpit is top-lighted.

Photo: George Miles Ryan Studios

data

doors, windows

Doors: mahogany/Rezo/Paine Lumber Company, Ltd., Oshkosh, Wis. **Drapery at Chancel:** beige glass fiber/Ben Rose, Inc., 1129 W. Sheridan Rd., Chicago, Ill.

furniture

Pews: natural-finish oak. **Chancel Furniture:** mahogany/dark green Naugahyde upholstery/United States Rubber Co., Coated Fabrics, Mishawaka, Ind.; architect-designed/custom-made.

lighting

All: brass hanging fixtures/recessed downlights/strip lights recessed above dropped ceiling/Lightolier, Inc., 346 Claremont Ave., Jersey City, N.J.

walls, ceiling, flooring

Walls: common brick, projecting headers, Flemish bond pattern at chancel/plaster painted pale beige, soft gray-green at window wall. **Columns:** beige vinyl fabric/Vicrtex/L. E. Carpenter & Co., Inc., 350 Fifth Ave., New York, N.Y. **Organ Grill:** mahogany/stained redwood/Monsanto Chemical Co., Rez Wood-Tones, Inc., 125 Colfax St., Springdale, Pa.; Saran woven grill cloth/mahogany, beige, gold/Lumite Div., Chicopee Mills, Inc., 47 Worth St., New York 13, N.Y. **Ceiling:** redwood/stained deeper redwood. **Flooring:** limestone/green terrazzo under pews.

accessories

Four-way Cross: satin-finish aluminum.

DESIGN THEORY: For a congregation stressing fellowship, requiring a church with "warmth and friendliness" to seat 575, the architects designed a rectangular space with a lofty center section and low side aisles. Chancel is dramatized by daylighting from a high 16'x20' window on the south; general light from wide windows on the south side aisle is supplemented by that from downlights, suspended brass fixtures, recessed lights behind dropped ceiling.

COLOR PLAN: Subdued colors of natural materials (brick, stone, redwood, mahogany, and oak) and neutral tones (beige columns, drapery, walls) with soft gray-green on south side aisle wall and in terrazzo flooring under pews.

client	First Christian Church
location	Minneapolis, Minnesota
architect	Thorshov & Cerny, Inc.
project designer	Newton E. Griffith
project manager	William Miller

churches

client | New York Mission Society
location | New York, New York
architect | Edgar Tafel

Photos: Lens Ician

DESIGN THEORY: The sanctuary seating 200 is part of a new church which entirely fills its site in a housing project on New York's lower east side. The dull texture of old, natural brick, laid in an interesting pattern on the side walls, contrasts with the satiny birch furnishings and the stained-wood ceiling. Focal point of the sanctuary is the floor-to-ceiling window behind the communion table. The window of textured green and amber glass reveals an exterior cross. Bilateral lighting, high on one side and low on the other, for the congregation is supplemented by lighting from three-way fixtures which may direct light up, down, or up and down.

COLOR PLAN: Quiet, richly varied colors of old brick, honey color birch furnishings, gray-stained wood planks and beams of the ceiling are intensified in smaller areas of amber and green stained glass, bronze color lighting fixtures. Soft gray green carpet at chancel and center aisle is a contrasting accent.

data

doors, windows

Doors: wood/United States Plywood Corp., 55 W. 44 St., New York, N.Y. **Windows:** amber and green textured glass/imported.

furniture

Pews, Pulpit Area: natural birch/honey color/architect-designed/custom-made/Joseph Rhoades Co., Sherman, Conn. **Communion Table:** birch/plastic-laminate top/marble crosspiece/architect-designed/custom-made/Joseph Rhoades Co.

lighting

Suspended Fixtures: up and/or down lights/anodized-aluminum finish/custom-made/Architectural Lighting Corp., 238 E. 47 St., New York, N.Y.

walls, ceiling, flooring

Walls: second-hand brick/plaster/United States Gypsum Co., 300 W. Adams St., Chicago 6, Ill. **Ceiling:** exposed-wood plank, laminated beams/gray Rez stain. **Flooring:** gray green carpet at chancel/The Magee Carpet Co., 295 Fifth Ave., New York 16, N.Y.; Cork-tone tile/Kentile, Inc., 58 Second Ave., Brooklyn 15, N.Y.

accessories

Cross: wood made from trees at church's summer camp.

churches

client	Christ Presbyterian Church
location	Terra Linda, California
architect	Campbell & Wong

DESIGN THEORY: The first building in a three-stage church building program for a community of tract houses, this all-purpose room now serves as chapel, classroom, and social hall; it will be a communal social hall, once the sanctuary is built. The architects chose an octagonal shape to create a more congenial feeling for community activities such as concerts, lectures, folk dancing. To allow for the flexibility required, the roof is carried on columns in the exterior walls and interior partitions are designed to be removable and reusable. Natural light is directed on the pulpit area by a skylight. Daylighting through the window walls is supplemented by light from specially-designed fixtures.

COLOR PLAN: Intended, the architects say, to be "restrained and dignified while at the same time alive and rich," colors chosen are pale-gold-beige grasscloth to blend with yellow-stained wood of the ceiling and contrast with the dark redwood and mahogany. Turquoise-blue carpet accents pulpit area.

Photos: Ernest Braun

data

cabinetwork

All: Lauan mahogany/architect-designed/custom-made.

doors, windows

Doors: Douglas fir. **Skylight:** octagonal/Misco wired glass/Mississippi Glass Co., 88 Angelica St., St. Louis 7, Mo.; architect-designed/custom-made. **Draperies:** natural linen gauze/Henry Calvin Fabrics, 412 Jackson Sq., San Francisco, Calif.

furniture

Chairs: teak/gray metal chairs/Pacific Overseas, Inc., 478 Jackson Sq., San Francisco, Calif.

lighting

Fixtures: dark-stained wood and painted metal/architect-designed/custom-made.

walls, ceiling, flooring

Walls: mahogany and redwood T&G/paint-stained; sheetrock painted or covered with grasscloth/Morganthaler Co., Jackson Sq., San Francisco, Calif. **Ceiling:** Douglas fir T&G/ rough-sawn 2x6/stained gold-yellow. **Flooring:** beige and gold concrete/smooth trowelled finish/pattern makes chair placement rapid and easy; turquoise-blue carpet at pulpit.

With the conviction that noise control is an important part of hospital planning, this article presents some of the acoustic considerations involved. Proper site location, orientation, wall construction, and window area can minimize external noise; various devices can reduce internal noise.

acoustical considerations for hospital planning

by M. Rettinger*

It has been said that noise is a social cause of disease. By the same token, quietude is frequently recommended, if not actually prescribed, by physicians for many cases of mental and physical disorders. For this reason sanitariums—hospitals for recuperative patients—are generally located in serene woodlands. Of course, the American Southwest with its vast deserts represents an ideal location for such health stations. Even mountain retreats, wherever the altitude has no undesirable effect on the patient, are chosen for convalescent homes, many a hospice in the European Alps serving both as traveller's lodge and as therapeutic establishment.

While there are few acoustic difficulties connected with recovery buildings—the most frequent of these being the installation of quiet heating and ventilating devices—the situation is considerably different for general hospitals, public or private; research hospitals, such as the Clinical Center at the National Institute of Health, Bethesda, Maryland, as well as maternity wards and various types of clinics, for example, are in this category. These buildings are generally located in or near cities made noisy by traffic and industry. It requires careful planning to obtain desired results, if they are at all economically possible.

Actually, there is little information available on the subject of acoustics and noise control of hospitals. The "bible," *Handbook of Noise Control*, edited by C. M. Harris[1] does not have a single pertinent paragraph, although it is, in the opinion of the writer, the most comprehensive book on noise control to date.

The following contains a succinct description of the acoustic considerations involved in hospital construction.

factors of site and surroundings

Undoubtedly, the first requirement toward planning for a city hospital is to make a noise survey of the proposed site. Such a survey should include both daylight and night hours, and should be made with the aid of half-octave sound filters, so as to learn the spectrum of the noise. Graphic level recordings are also advisable, to gain a measure of the maximum noise which exists at the desired location.

In these days of rapid transportation progress, it becomes necessary also to consider the possibility that a freeway may be planned near the intended site. In one such case, the writer made sound level measurements of freeway construction work, at a distance equal to that existing between the planned hospital and the planned freeway. The result was that the hospital project had to be postponed, because the prolonged noise of the freeway construction would have been highly objectionable to the patients, while building the hospital in such a way as to exclude most of the unwanted sound of the earthmovers, tractors, etc., would have proven too costly. However, if the proposed site had been at a somewhat greater distance, temporary measures by way of barriers could have been taken to permit the construction of the hospital. Such barriers, depending on their height, location, and massiveness, can be made to exhibit noise level reductions of 15 to 25 decibels.[2] Similarly, if the proposed freeway can be made of the "depressed" type, with its concrete lanes below the general adjoining land level, or if the hospital can be located near a freeway already "depressed," similar noise reduction values can be expected.[3]

In metropolitan hospitals whenever possible, the corridors should be located toward the streets, so that they can act as sound buffers, for the wards facing the courts. A generous set-back of the buildings away from the noisy thoroughfares is also desired, with laundries and ambulance garages preferably housed in separate structures. Complete air-conditioning is almost a necessary requirement these days, not only from the noise-quieting point of view, but also on account of ever-increasing smog.

determination of wall construction

After the site has been selected, and a general plan of the outline of the hospital has been made, a wall construction should be determined which will provide in the wards a noise level not exceeding 40 db, as measured with a standard sound level meter set on the "A" (40 db equal loudness contour characteristic) scale. Actually, such a specification is valid only if considered in reference to the acceptable noise spectrum for wards, commonly termed NC (noise criterion) curve. Figure 1 shows the acceptable NC-30 curve for hospitals, plotted on the type of octave-bank analysis paper manufactured by the Codex Book Company, the graph sheets generally used for this purpose.

*Consultant on Acoustics, Encino, Calif.

[1] *McGraw-Hill Book Company, New York, 1957, $17.50*

[2] *"Noise Level Reductions of Barriers," by M. Rettinger,* Journal of Noise Control, *vol. 3, no. 5, Sept. 1957.*

[3] *"Noise Level Reduction of Depressed Freeways," by M. Rettinger,* Journal of Noise Control, *vol 5, no. 1, March 1959.*

If the noise spectrum is of the type shown on this curve, then the 40 db figure mentioned previously is a brief way of specifying the maximum noise level, particularly if written 40 db (NC).[4] It may be noted that the NC curve for hospitals practically coincides with that for quiet homes, at least as far as sleeping areas of the home are concerned. Acoustically, then, a home bedroom is much like a hospital ward.

[4] *This is sometimes written 40 dba (NC), to indicate that the "A" scale was used in taking the reading.*

Many city hospitals are constructed of 6″ or 8″ thick concrete walls. Figure 2 shows the sound transmission loss of solid, homogeneous concrete walls as a function of their surface density. Thus a wall weighing 100 lbs per sq ft, such as 8″ thick concrete, exhibits an average transmission loss of 52 db. *If* the hospital walls were completely solid, that is, without windows, and *if* the wards were treated with an efficient sound absorber so that no sound "build-up" could occur by repeated reflections within the ward, then the addition of the curve of Figure 1 to the pertinent one of Figure 2 would provide a measure of the maximum traffic noise to which the hospital could be exposed, to achieve in the wards a noise spectrum of the order shown on Figure 1. The results of the addition are shown on Figure 3 (top curve).

effect of windows

Hospitals, however, usually have windows. Again, *if* the entire ward wall

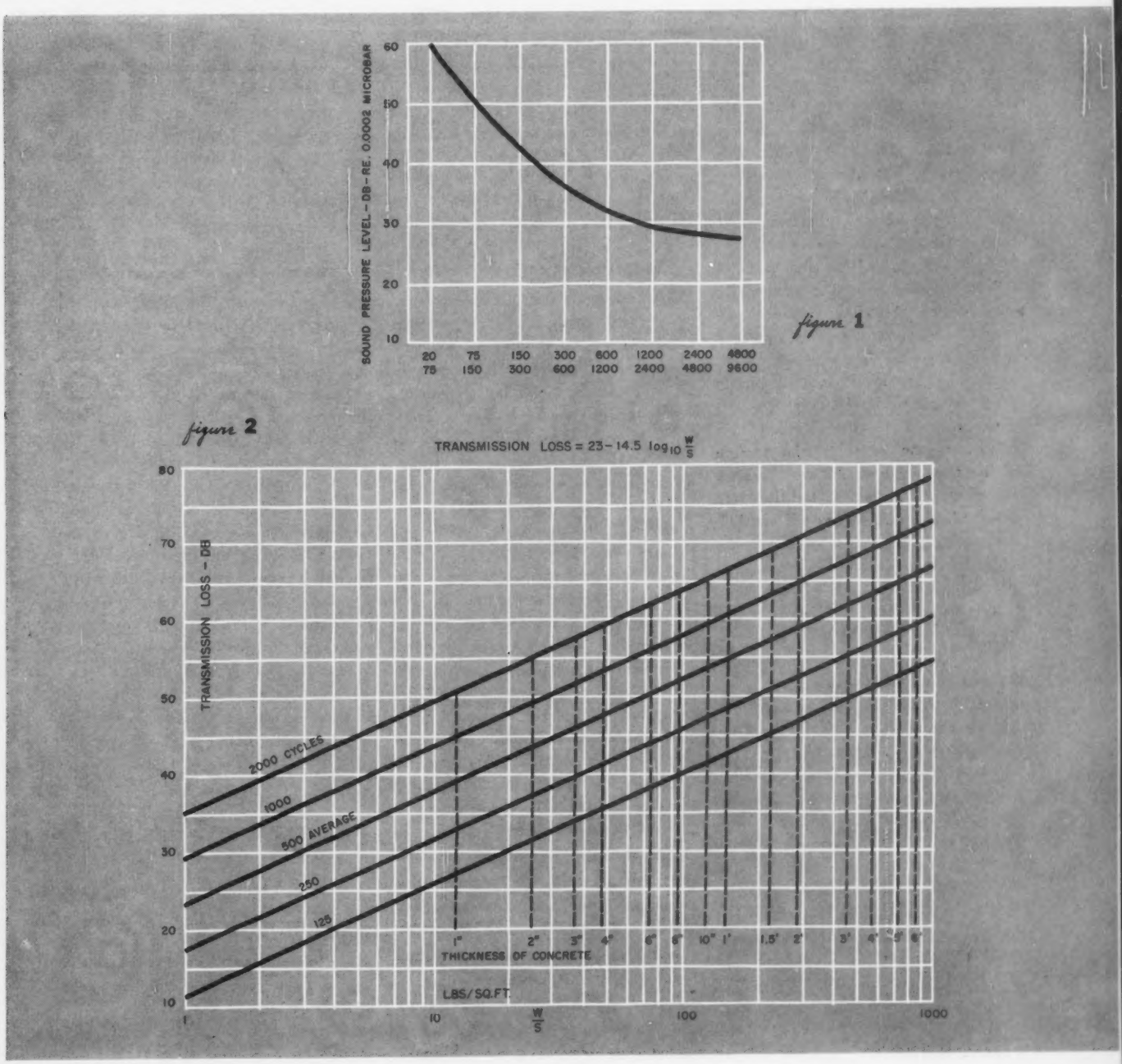


figure 1

figure 2

facing the street traffic were made of ¼″ plate glass, and *if* the wards were treated with an efficient sound absorber to avoid sound "build-up" in the room, then by the same process of addition outlined above, we would arrive at the maximum noise level permissible at the hospital wall to obtain within the wards the required NC-30 spectrum. This result is also shown on Figure 3. Obviously, the real maximum noise level (for a hospital with 8″ concrete walls and ¼″ thick windows) lies somewhere between the two upper curves of Figure 3, and will depend on the ratio of wall to window area. The smaller the window area, the closer will the permissible maximum noise level approach the top curve of Figure 3—all on the assumption that the window will remain closed at all times. Actually, the window area should be considered in relation to the entire interior surface of the room, and should even consider the effect of the area of the door into the ward. The calculations are not difficult, and can be found in most books on architectural acoustics. The equation generally employed for the "noise-reduction factor" in decibels—the difference in decibels between the noise level outside a room and the noise level in the room—is given by 10 $\log_{10}$ (A/T), where A represents the total absorption in the room, and T is the total "transmittance."[5] Thus, for a very simplified example we may consider a 8″, 100 sq ft large concrete wall facing the street traffic. With a transmission loss of 54 db, its transmission coefficient is .000004, and its transmittivity (100 x .000004) is .0004. Assume the window area to be 20 sq ft, and its transmission loss to be 30 db, so that its transmission coefficient is .001, and its transmittivity, .02. Assume the total absorption in the ward to be 300 sabines. The resulting noise reduction factor becomes 10 $\log_{10}$ (300/0.0204) = 41.67 db. The window, therefore, has reduced the original "insulation" from 54 (for concrete only) to approximately 42 db, thus lowering it by 12 db. If the window had been twice as large, or 40 sq ft, the noise reduction factor would have been 38.7 db, and hence would have lowered the "isolation" still another 3 db.

[5] *Transmittance, T, is the sum of* t_1S_1, t_2S_2, *etc., when t is the transmission coefficient of the wall, window, or door, and S is the respective area of wall, window, or do r*

reduction of internal noise

No less important than the consideration of external noise is that of internal noise. Such unwanted sound may be of many sources, like footfalls, the rolling of foodcarts, the crying of patients, ventilating or air-conditioning systems. Most textbooks of architectural acoustics provide calculations for the noise level produced by ventilating machinery of a known rating, given duct length, and type of duct treatment. Footfalls and similar noises in corridors, as well as the crying of the patients in the wards, are most effectively reduced by the installation of sound-absorbent material on the ceiling. The type of acoustic treatment frequently employed in hospitals consists of rockwool bats faced by perforated metal or asbestos board. Such material may be repeatedly painted as well as washed without losing its effectiveness. It is unfortunate that surgical wards may, in some instances, not carry acoustic treatment, particularly in view of the fact that sound-absorbents can now be had which are faced with a plastic membrane completely impervious to dust.

In the case of large hospitals it may be desirable to engage a consultant on acoustics, not only during the planning and the construction of the building, but also for a period after completion. There are many instances where the installation of new hospital equipment, such as blood centrifuges, automatic washers of various types, create noise problems. Many of the larger hospitals have rooms set aside for research, work which can frequently be done only with difficulty in the presence of noise. In such cases, the installation of sound-retarding doors or double doors, particularly if a small vestibule can be interposed between the two, will often provide sufficient quietness.

method of noise evaluation

The noise of many kinds of hospital machinery is now rated in sones. The unit indicates loudness, or the subjective strength of a sound. This manner of noise evaluation is not new, although the presently described method is of recent origin.[6] The following is a resume of the subject, inclusive of a sample loudness calculation for the readier understanding of the topic.

Consider the top curve of Figure 3. The curve shows the spectrum of the maximum permissible traffic noise near a hospital built of 8″ concrete walls. How loud is this noise? To learn the answer to this question we must first convert the sound pressure levels into sones. This may be done by the nomogram shown on Figure 4. The results are tabulated below.

Octave band	Sound pressure level (db)	Sones
0- 75	94	22
75- 150	91	25
150- 300	89	30
300- 600	89	32
600 1200	91	36
1200-2400	94	52
2400-4800	98	99
		296

The formula used to convert the sones obtained above into an overall loudness figure S_t is as follows:

[6] *"Calculating Loudness," by S. S. Stevens,* Journal of Noise Control, *vol. 3, no. 5, Sept. 1957, p. 11.*

$$S_t = S_M + .3\ (\overline{S} - S_M)$$

where S_M is the loudness of the loudest band—in this case 99 sones—and where $\overline{S}$ is the sum of the sones—296 sones, as shown above. Thus:

$$S_t = 99 + .3\ (296 - 99)$$
$$= 158.1 \text{ sones}$$
$$= 115 \text{ phons}$$

The term phons is expressive of loudness level. For instance, if the noise of a concrete mixer sounds as loud to the average listener as a 1000 cycle tone having a sound pressure level of 115 decibels, we say that the loudness level (not the loudness) of the noise is 115 phons. It is an arbitrary yardstick, and one which is nonlinearly related to loudness. A signal of loudness 4 sones, however, has a loudness four times as great as a signal of loudness 1 sone. Sones, therefore, are a linear measure of loudness.

figure 3

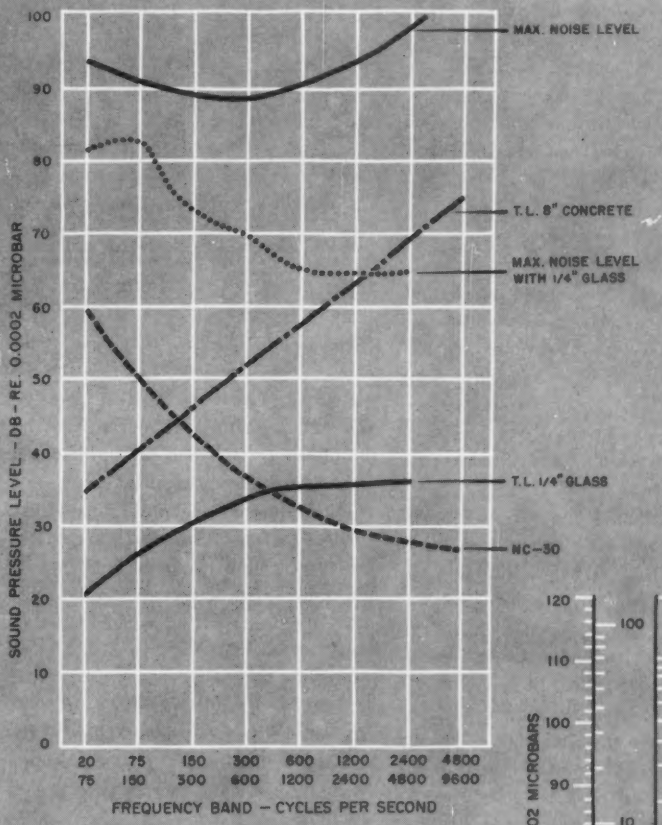
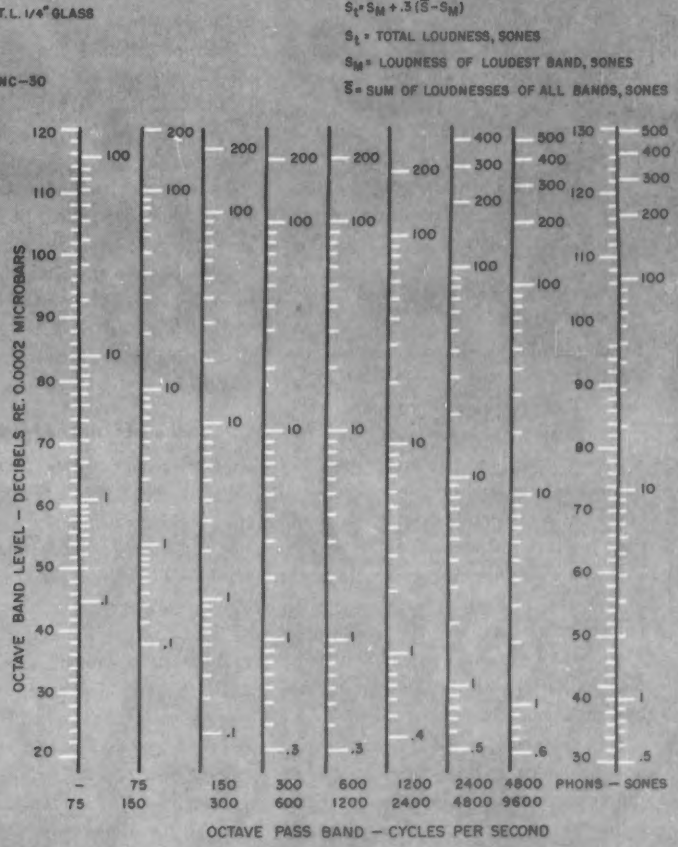


figure 4


$S_t = S_M + .3(\overline{S} - S_M)$
S_t = TOTAL LOUDNESS, SONES
S_M = LOUDNESS OF LOUDEST BAND, SONES
$\overline{S}$ = SUM OF LOUDNESSES OF ALL BANDS, SONES
OCTAVE BAND LEVEL - DECIBELS RE. 0.0002 MICROBARS
PHONS - SONES
OCTAVE PASS BAND - CYCLES PER SECOND
- 75
75 150
150 300
300 600
600 1200
1200 2400
2400 4800
4800 9600

Where plumbing subassemblies are repetitive, as in multi-story buildings, prefabrication is exceedingly effective. The many economies and advantages of prefabrication are suggested by the cases of two recent office buildings: Time-Life in New York, and Kaiser Center in Oakland.

prefab copper tubing

Plumbing prefabrication seldom means complete preassembly of an entire system which is able to be dropped into place ready for the water to be turned on. Most systems, especially those for large commercial buildings, will not permit this. But prefabrication to a lesser extent—where piping can be broken down into a repetition of similar assemblies—is not only feasible but economical. Subassemblies are prefabricated at a convenient location (at site or shop), then quickly and easily assembled into the over-all system at the proper time. Plumbing installations which particularly lend themselves to such prefabrication are thus: rest rooms in commercial buildings, bathrooms and kitchens in apartments and bathrooms in hotels.

Two large office buildings, presently nearing completion, are making extensive use of plumbing prefabrication. A discussion of the general principles involved, and their application to these buildings, will illustrate why the technique is becoming increasingly adopted in such installations.

working conditions and operations

To the plumbing contractor and his men, prefabrication offers a number of advantages. The plumbing journeyman works under ideal conditions, in an area free of encumbrances and interruptions. His lighting is good and he is not exposed to inclement weather; both of these conditions improve his personal safety and enable him to do his best work. He works at a bench, with all necessary materials immediately accessible. He preassembles and installs the same assemblies, assuring familiarity with the material handled and proficiency in the operation.

An advantage noted by engineering and field men is that the technique requires no special knowledge by either estimator or mechanic. The architect's drawings show through layout and size what can be most conveniently and economically prefabricated. Sketches are made of duplicated assembly styles to be prefabricated and the total number is calculated. From the sketches, single extremely accurate sample subassemblies are then fabricated and checked carefully. These are then used as "models" around which jigs are made. These jigs, composed of heavy steel supporting plates and angles, and bars, are designed to hold the copper water and drainage tube firmly in a true relative position. The jig is then used to put together the required number of assemblies. With one man performing the same tasks repeatedly, there is opportunity for developing many short cuts in the operation.

Transportation to the job site is simplified by the light copper assemblies. In addition, soldered joints will not move during handling, as threaded joints so often do.

A great deal of miscellaneous handling is thus eliminated; it is not necessary to parcel out roughly estimated lengths of tube and a number of fittings to each floor. Each prefabricated assembly is clearly marked as to its ultimate destination and arrives ready to be installed.

economic use of materials

Prefabrication assures maximum economy in the use of pipe and fittings. Rather than cutting pipe on the site, in the sequence that an in-place operation would require, the journeyman can cut the threadless copper pipe in advance, so as to utilize an entire length. For example, if an assembly calls for use of a 10′, 8′, and 4′ length, in that order, cutting up a 20′ length of pipe for the required pieces will leave short waste ends. When prefabricating, however, the journeyman will cut all the 10′ pieces, then all the 8′ pieces, then be able to fill in the remaining 4′ pieces.

influence on other trades

Benefits of plumbing prefabrication extend beyond the particular advantages to the plumbing contractor, however, as the technique also speeds up the work of trades following the plumber. A stockpile of required subassemblies is maintained in advance of the time when they are needed. When progress of other work on a particular floor allows installation of the preassembled plumbing, it can be quickly accomplished without delay or bottleneck.

This allows the following operations, such as construction of interior walls around the plumbing rough, to proceed almost immediately, without waiting for the plumbing piping to be delivered, cut to size, and then assembled.

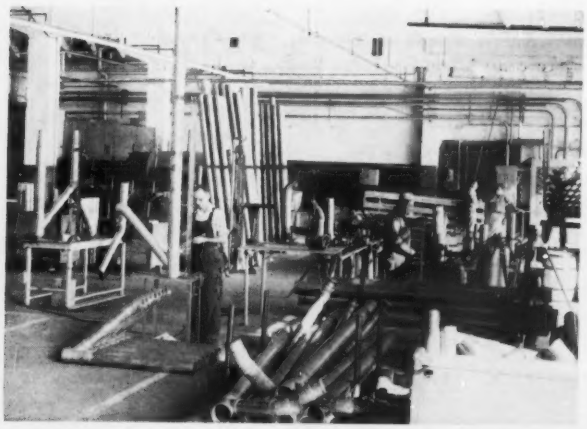
Elimination of such delay pays dividends all along the line. If, eventually, the final completion and occupancy of the building is advanced by only a few days, the dollar saving to the owner, in rent and financing, will be considerable.

Time-Life building

One building where prefabrication of the hot and cold water supply is providing all these economies is the Time & Life Building in New York; Harrison & Abramovitz were architects. Approximately 100 similar prefabricated copper headers for water supply will have been installed when the building is completed. While a considerable variety of threadless copper piping will be used, ranging in diameter from ½″ to 8″, the headers represent a perfect example of how planning and timing with prefabrication can perform a service to all trades concerned.

These headers, each about 20′ long, proved highly adaptable to job-site prefabrication, as they could be divided into two 10′ sections. The sections are prefabricated in the contractor's basement work area and stockpiled there until ready for use. When construction

Ten-foot header for water supply is being prefabricated for Time-Life Building (above). *Approximately 100 such headers were used in the building. Header is installed* (left) *with two joints, requiring less than a half-hour's work.*



Prefabricating shop shows a variety of jigs (left), *welded together from heavy steel plate and angles. Stocks of drainage tube are already cut to size. Subassembly in final location* (below) *is seen duplicated in the background at Kaiser Center.*

on a floor has proceeded to the proper point, the sections are assembled into the main system by simply brazing two joints, one connecting the two sections and the other tying the header into the main through a shut-off valve.

The plumbing contractor, C. H. Cronin Incorporated, has 15 years of experience using prefabrication on large commercial buildings. The expectation of savings in time and material for this building have been well substantiated.

Kaiser Center office building

Another contractor, the Scott Company, is extensively employing prefabrication techniques in the Kaiser Center office building in Oakland, California, which is slated to be the biggest office building in the West; Welton Becket Associates were architects. Approximately 4500 people will be accommodated in the 802,000 sq ft of net usable space; approximately 150,000 lbs of DWV drainage tube, copper tube, and Types K, L, and M copper tube for water lines are being used.

Several factors in construction and design of the building made it possible for Scott to use prefabrication on this job. One is the existence of so many similar subassemblies, both in the 13 wetlines that serve the 28 floors of the structure, and in the branch and unit assemblies that service washrooms and drinking fountains for supply and drainage. The contractor estimated that 354 different subassembly styles were to be shop-prefabricated. Of these 354, one typical wetline subassembly will be repeated 364 times, and a drinking-fountain subassembly repeated 89 times. The balance of 352 other typical subassemblies is broken down into 103 repeated styles for hot- and cold-water supply and 249 styles for drainage lines.

With such a considerable number of repeated typical assemblies, the amount of time needed for in-place operations is cut immensely: the contractor estimates that shop-prefabricating subassemblies for both water supply and drainage lines will save 22 percent in working time.

Scott has also found that prefabrication encourages precise layout; with the job almost completed, a sleeve or coupling has not been missed by as much as ⅛″ when setting prefabricated units in place. As far as Scott is concerned, this unexpected dividend makes a conclusive case in favor of prefabricated plumbing.

New laboratory for Yale University School of Forestry provides highly-specialized equipment for studying wood technology. Precise levels of temperature, humidity, and light are all electronically controlled, making particularly heavy demands on the electrical distribution system.

electrical distribution: forestry laboratory

Although wood has been used since earliest times as a commonplace material in the manufacture of buildings, ships, and countless other products, less is known about its chemical structure than about that of the newest metal alloy.

One of the functions of Yale University's School of Forestry, the oldest institution of its kind in the Western Hemisphere, is to expand knowledge of the properties of wood in order to increase its usefulness to man. The primary purpose of the school, of course, is to prepare young men for careers in forestry. Research in wood technology—the study of wood as a building material—is therefore only part of the school's fuller program that includes such studies as the production of crops of timber, the administration of forestry enterprises, the management of forests for uses other than wood production, and the manufacture and utilization of wood products.

the new laboratory building

The new William B. Greeley Memorial Laboratory and its adjacent greenhouses will have an important part in the school's expanding program of research in all of these areas. Little research of an extensive nature has been done by the commercial lumber industry itself, although it lends considerable support to Yale's program of research and education. It has also contributed funds for the new research laboratory.

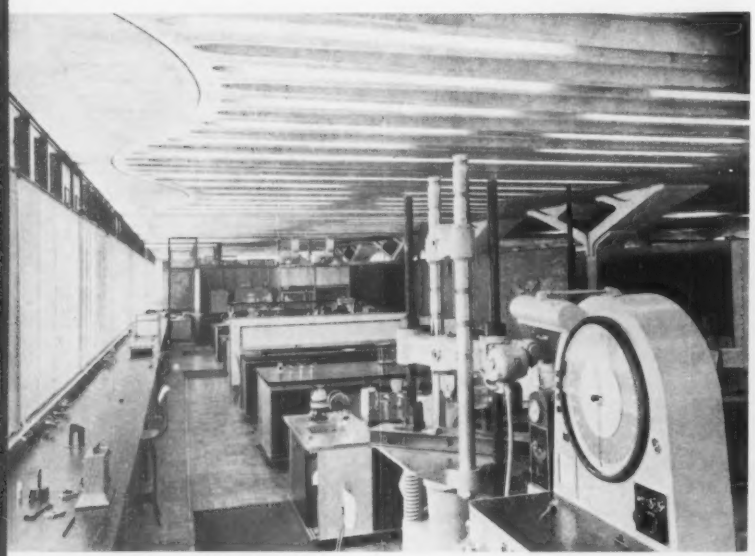
Located on the campus at New Haven, the one-story building is the design of Paul Rudolph, chairman of Yale's Department of Architecture. Hubbard, Lawless & Blakely of New Haven were consulting engineers.

All but one of the building's operational functions are on the main floor, which contains student offices, instrument storage rooms, and laboratory rooms devoted to investigations in wood technology, forest genetics, tree physiology, forest ecology, and wood preservation. The basement, besides an incubator room, contains boiler and compressor, and equipment for storage rooms.

special electrical equipment

Much of the building's electrical installation is for highly specialized equipment which will be used in the laboratories. Of special interest are the humidity-, temperature-, and light-controlled rooms.

Illumination levels of 2500 ft-c (approaching sunlight) were achieved in the light-controlled rooms by hanging very-high intensity fluorescent lamps, approximately 3″ on center, over the entire ceiling area.



Humidity-controlled rooms are maintained at a constant temperature of 72 F, with a varying relative humidity of 35 to 95 percent, by the combined use of refrigerated cooling to lower temperatures and dehumidify, and steam air heating and steam spray to raise temperatures and humidify. All light- and temperature-controlled areas are controlled by electronic devices.

electrical distribution system

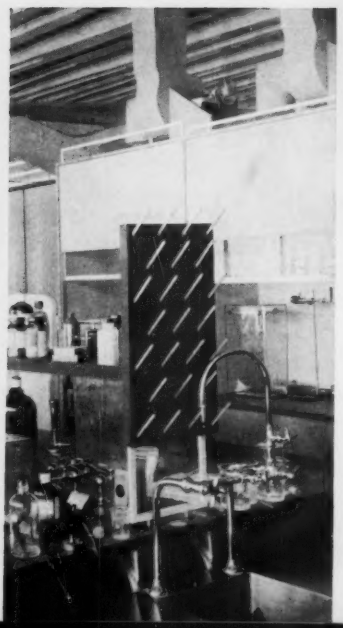
Because these rooms—together with kilns, drying ovens, hotplates, and other electrically heated equipment—make exceptionally heavy demands, the electrical distribution system's total connected load, 1795 amp, is correspondingly heavy for a building of this size. Placing the system in rigid-steel conduit made possible the precise load definition for specialized electrical operation of this equipment.

The engineers' design was a 120/208-v, four-wire, three-phase system. The local electric utility put in three single-phase, 100-kva, 2400-v transformers especially for the building. Two 3½″ rigid steel conduits bring in the service to an entrance panel consisting of nine circuit-breakers; of these, seven are 200-amp, one is 225-amp, and the last is 175-amp. From the panel, nine 3½″ rigid-steel conduit risers, each containing four 4/0 moisture-and-heat-resistant rubber-insulated conductors, take the service to various panels at strategic locations on the main floor. The greenhouse service, which will not be discussed here, is fed from the main secondary bus of the same transformers.

Lighting and power loads are well divided between the risers, each of which supplies some of the necessary power. A typical example is the No. 4 riser, which contains four 4/0 conductors in 3½″ rigid-steel conduit, supplying lighting for some area lighting and power for an assortment of laboratory equipment such as testing machines, a drying oven, several motors, three 1000-w hotplates, and electronic equipment.

There are numerous receptacles in every part of the laboratory *(center photo, below)*, so many that, in the words of the engineer "a receptacle is provided wherever the student turns . . . every lab room and lab table is surrounded by 110/208-v strip-wiring type outlets."

There is approximately 70-75 percent over-all diversity on the electrical distribution system, but the strip-wiring outlets were assumed to have a diversity of 50 percent, the power system 70 percent, while lighting was installed at 100 percent demand.



Laboratory rooms (left, far left) *show high-intensity lighting installations. One laboratory has an illumination level of 2500 ft-c, approaching that of sunlight. The distribution system's total load, 1795 amp, is relatively heavy for the building's size.*

Mechanics of arch and suspension systems are intuitively simple, this author points out, and only a basic knowledge of elementary statics, geometry, and algebra is needed for their analysis. Calculus confirms this interpretation of elastomechanics. Formulas developed here are especially useful in preparing preliminary designs. Illustrations are from the author's notebook.

arch and suspension systems

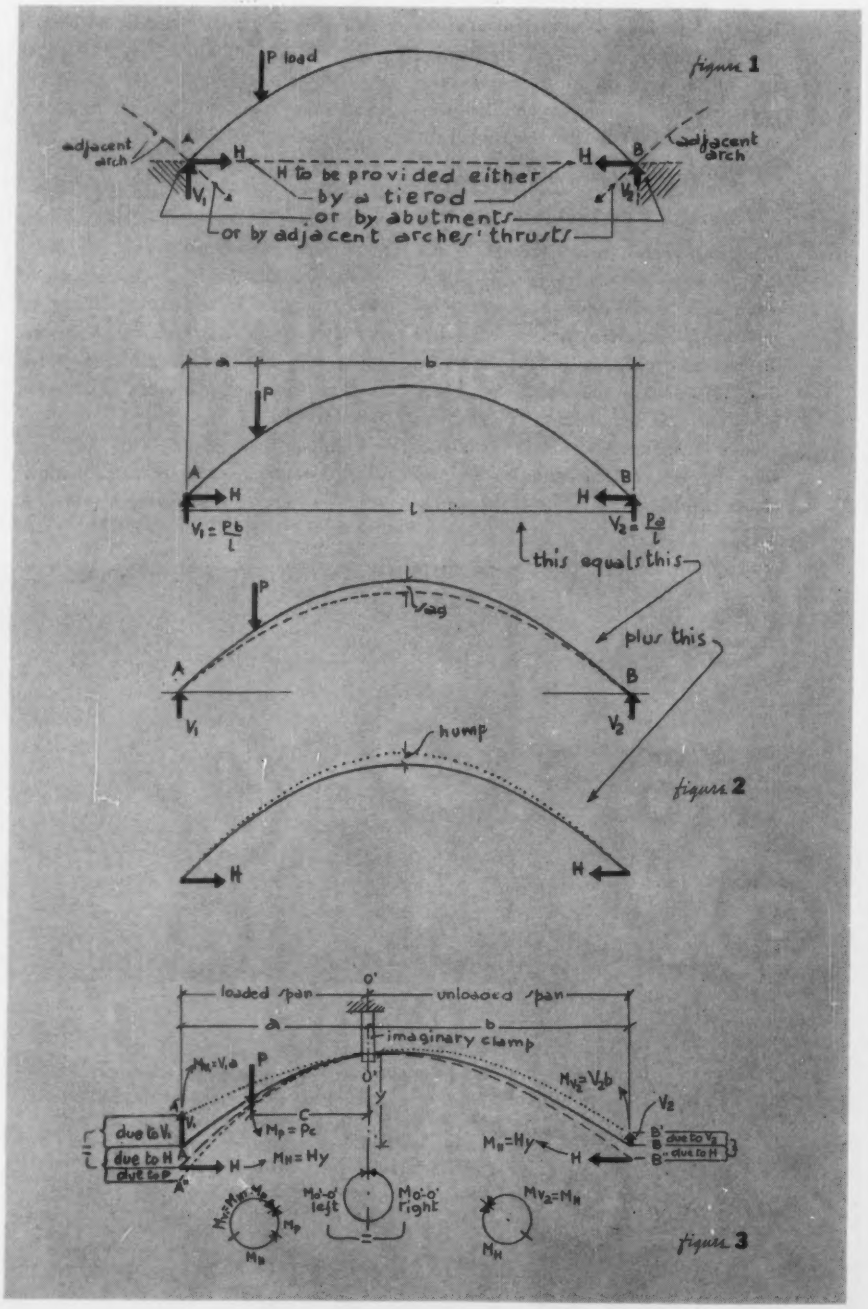
by Paul Chelazzi*

"The arch never sleeps," says a Hindu proverb, and to some designers today this structure still seems mysterious and complex. Its mechanics, however, are intuitively simple. No more is required for analysis than the statics and calculus that are part of every architect's basic training.

An arch behaves exactly like a beam at the end of which two opposing, horizontal, inwardly-acting forces are applied. These forces are provided either by abutments, tie rod, or thrusts of adjacent arches (*Figure 1*). The two balanced simultaneous actions developed in an arch are shown (*Figure 2*). When a load is imposed on a beam, it sags; an arch similarly would sag if it were not for the "tieing" forces H that cause it to hump up.

Once the system of forces acting on it are in equilibrium, we can fix the arch in space by an imaginary clamp at any section O′-O′ and observe the effect of these forces after removing the supports (*Figure 3*). Obviously V_1 would displace the left end from A to A′ due to moment V_1a; similarly, V_2 would move the right end up from B to B′ due to moment V_2b. To prevent this displacement in the unloaded span, H has to develop a moment Hy corresponding to a downward translation of B-B″ equal to the upward one, B-B′. In the loaded span the combined effect of H and P balances that of V. Since the ends do not move and the arch is in equilibrium, moments are balancing at A when $M_{V1} = M_H + M_P$, and at B when $M_{V2} = M_H$, while on both sides of the section O′-O′ moments balance each other.

Now let us assume the condition of uniform loading along the span (*Figure 4a*). Since the loading is symmetrical with respect to crown section O-O, we may separate the two half-spans and investigate them as shown (*Figure 4b*). Should the arch be parabolic in shape, it could be shown that M_H plus M_P is equal to M_V throughout the span and



* Engineer-Architect, Member of American Society of Civil Engineers, New York, N. Y.

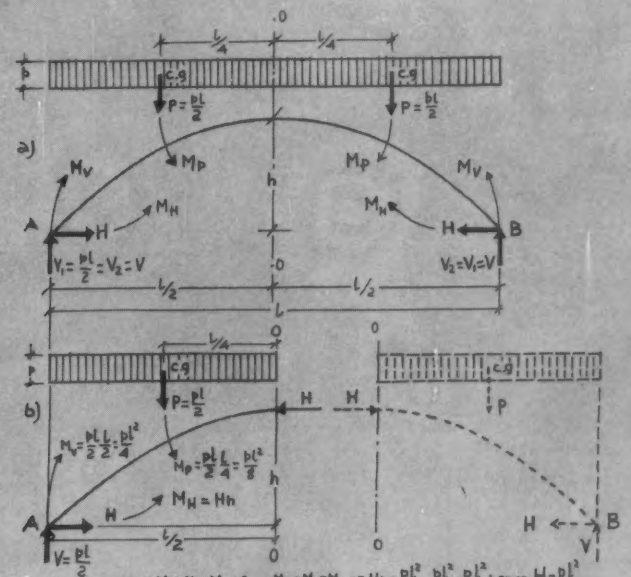
since no bending occurs all sections are axially stressed.

Let us now take Equation **2** which is derived from the Elastic Arch Theory (*Figure 5*). Even though it could be explained in simple terms, for the purposes of this discussion it will be taken for granted. (Numerical references in this paragraph are to the equations of Figures 4 and 5). In **2**, M′ = moment in the arch when performing as a simple beam, and y = moment due to a one-pound force acting horizontally from the support. Since the two halves of the arch act alike, the numerator in **2** is obtained by doubling the corresponding value of it for one half span Equation **3**. At any section, x distance from A, the value of the simple beam moment is given by Equation **4**. From the equation of the parabola with origin at A we have Equation **5**. In squaring the value given by **5**, we obtain Equation **6**. Hence Equation **7**, which is the denominator of **2**. Substituting the values **4** and **5** in the numerator of **2**, we have Equation **8**. Integrating **8** we derive Equation **9**. From **3** and **7** we finally obtain Equation **10**, which gives the same value as **1** (*Figure 4*).

The value of thrust T is usually determined by integrating twice the differential equation of the parabola. But it may be readily obtained as shown in the diagram (*Figure 5*) since Equation **11** and **12** produce Equation **13**.

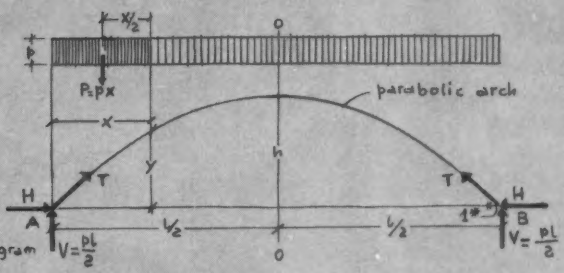
Several principles can be noted, regardless of type or distribution of load. First, the tieing forces H are constantly equal in magnitude, but reversed. They always produce a maximum humping at the crown. Second, for all practical purposes of preliminary design, the moment at the crown section O-O may be assumed equal to zero. In fact there ap-

figure 4



1 $\Sigma M_o = 0$ when $M_V - M_H - M_P = 0$ or $M_H = M_V - M_P$ or $Hh = \frac{pl^2}{4} - \frac{pl^2}{8} = \frac{pl^2}{8}$ hence $H = \frac{pl^2}{8h}$

figure 5



2 $H = \frac{\int_o^l M'y\,dx}{\int_o^l y^2\,dx}$

3 $\int_o^l M'y\,dx = 2\int_o^{l/2} M'y\,dx$ · 4 $M' = Vx - P\frac{x}{2} = \frac{pl}{2}x - px\frac{x}{2} = \frac{p}{2}(lx - x^2)$ 5 $y = \frac{4hx}{l^2}(l-x) = 4h\left(\frac{x}{l} - \frac{x^2}{l^2}\right)$ 6 $y^2 = 16h^2\left(\frac{x}{l} - \frac{x^2}{l^2}\right)^2$

7 $\int_o^l y^2\,dx = 16h^2\int_o^l \left(\frac{x}{l} - \frac{x^2}{l^2}\right)^2 dx = 16h^2\int_o^l \left(\frac{x^2}{l^2} - \frac{2x^3}{l^3} + \frac{x^4}{l^4}\right)dx = 16h^2\left[\frac{x^3}{3l^2} - \frac{2x^4}{4l^3} + \frac{x^5}{5l^4}\right]_o^l = 16h^2\left(\frac{l^3}{3l^2} - \frac{2l^4}{4l^3} + \frac{l^5}{5l^4}\right) = 16h^2\left(\frac{1}{3} - \frac{1}{2} + \frac{1}{5}\right) = 16h^2\frac{1}{30} = \frac{8}{15}h^2l$

8 $M'y = \frac{p}{2}(lx - x^2)\,4h\left(\frac{x}{l} - \frac{x^2}{l^2}\right) = 2ph\left(lx - x^2\right)\left(\frac{x}{l} - \frac{x^2}{l^2}\right) = 2ph\left(x^2 - \frac{x^3}{l} - \frac{x^3}{l} + \frac{x^4}{l^2}\right)$

9 $\int_o^{l/2} M'y\,dx = 2ph\int_o^{l/2}\left(x^2 - \frac{2x^3}{l} + \frac{x^4}{l^2}\right)dx = 2ph\left[\frac{x^3}{3} - \frac{x^4}{2l} + \frac{x^5}{5l^2}\right]_o^{l/2} = 2ph\left[\frac{l^3}{8\cdot 3} - \frac{l^4}{16\,2l} + \frac{l^5}{32\,5l^2}\right] = 2ph\left(\frac{l^3}{24} - \frac{l^3}{32} + \frac{l^3}{160}\right) = phl^3\left(\frac{1}{12} - \frac{1}{16} + \frac{1}{80}\right) =$

$= phl^3\left(\frac{80}{960} - \frac{60}{960} + \frac{12}{960}\right) = phl^3\frac{32}{960} = \frac{phl^3}{30}$

10 $H = \frac{2\frac{phl^3}{30}}{\frac{8}{15}h^2l} = \frac{15phl^3}{8\cdot 15h^2l} = \frac{pl^2}{8h}$ 11 $T = \sqrt{H^2 + V^2}$ 12 $V = \frac{pl}{2} = \frac{pl^2}{8h}\frac{4h}{l} = H\frac{4h}{l}$ 13 $T = \sqrt{H^2 + H^2\frac{16h^2}{l^2}} = H\sqrt{1 + \frac{16h^2}{l^2}}$

pears to be a point of contraflexure where the moment changes in sign whenever asymmetrical loading occurs. One of the most critical of these conditions is shown (*Figure 6*). The derivation of H for this situation gives the same value as that given by the Elastic Theory. Evidently, the load will cause the left half-arch to sag and its length to shorten as shown (*Figure 7*). However, the total length of the arch, L, remains unchanged (except for minor, and generally negligible, amounts); consequently the length of the unloaded semi-arch increases by the same amount as the loaded semi-arch decreases. The fact that the right semi-arch, therefore, has to hump up, has been confirmed by experimentation.[1]

As for the suspension system, the clearest illustration of its mechanics is the clothesline. It hangs on a funicular (*Figure 8*) and stressing may be determined graphically as shown. Should the load be uniformly distributed horizontally, then it would assume a parabolic shape and the above-outlined derivations for arches of similar curvature would apply.[2]

The derivations are also valid for investigating suspenarch structures resulting from a combination of arch and suspension systems. The mechanics as shown (*Figure 9*) can be readily understood. In this field of research, the Theory for Analysis of the Single Suspenarch Truss, by Blair Birdsall,[3] is a basic contribution to the development of this type of structure.

It should not be construed that the intuitive approach presented here can supply complete information. It may help the architect in visualizing his arched structures and preparing consistent preliminary designs, but further investigation based on elastic distortions is indispensable for final plans.

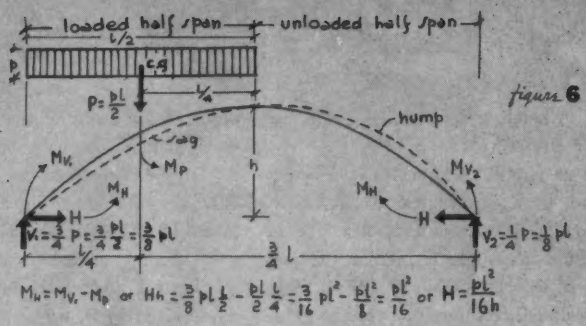

loaded half span
unloaded half span
hump
sag
$M_H = M_{V_1} - M_p$ or $H_H = \frac{3}{8}pl\frac{l}{2} - \frac{pl}{2}\frac{l}{4} = \frac{3}{16}pl^2 - \frac{pl^2}{8} = \frac{pl^2}{16}$ or $H = \frac{pL^2}{16h}$

figure 6

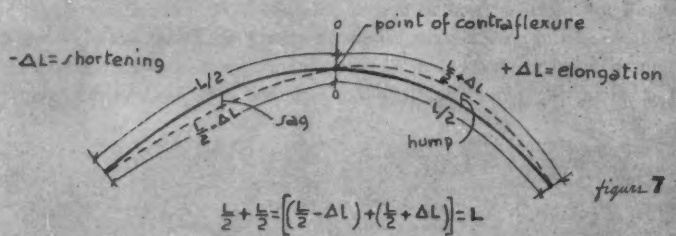

point of contraflexure
-ΔL = shortening
+ΔL = elongation
sag
hump
$\frac{l}{2} + \frac{l}{2} = \left[\left(\frac{l}{2} - \Delta l\right) + \left(\frac{l}{2} + \Delta L\right)\right] = L$

figure 7

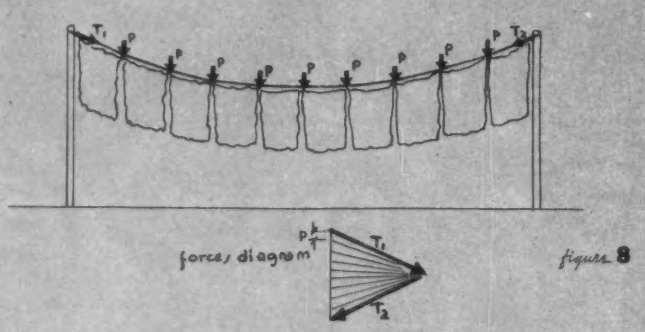


figure 8

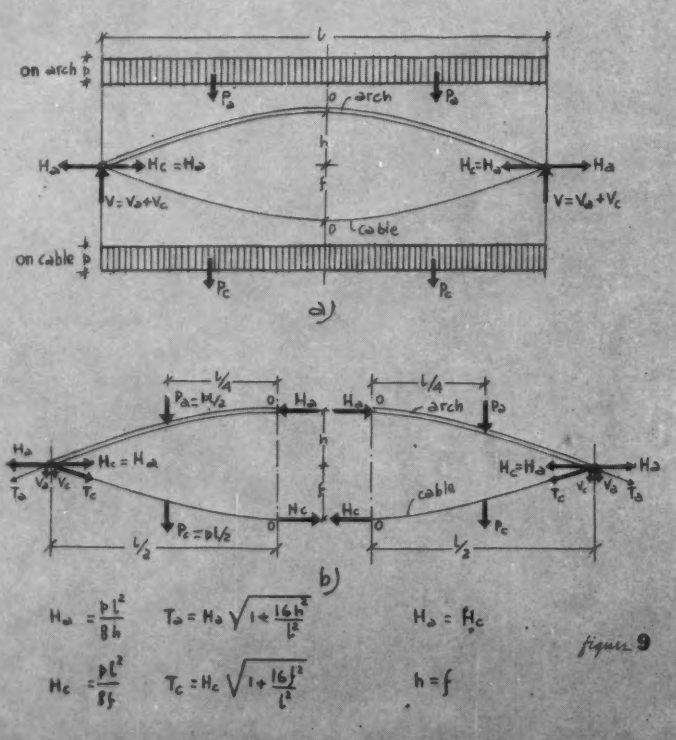
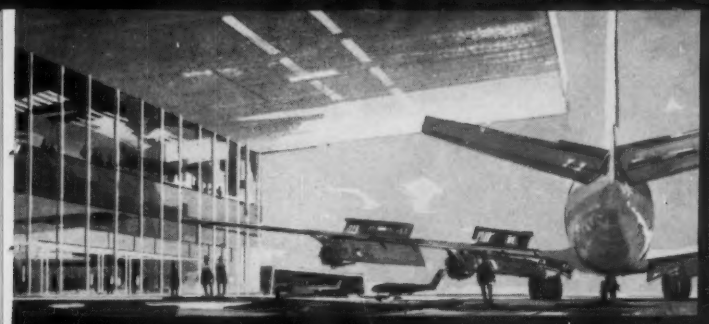


figure 9

[1] "Roebling's Suspenarch Demonstrated," SEPTEMBER 1957 P/A.
[2] "Structures in Membrane on Co-Acting Ribs," JULY 1956 P/A.
[3] *Chief Engineer, Bridge Division, John A. Roebling's Sons Co.*



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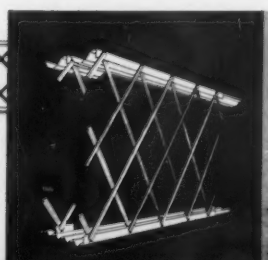

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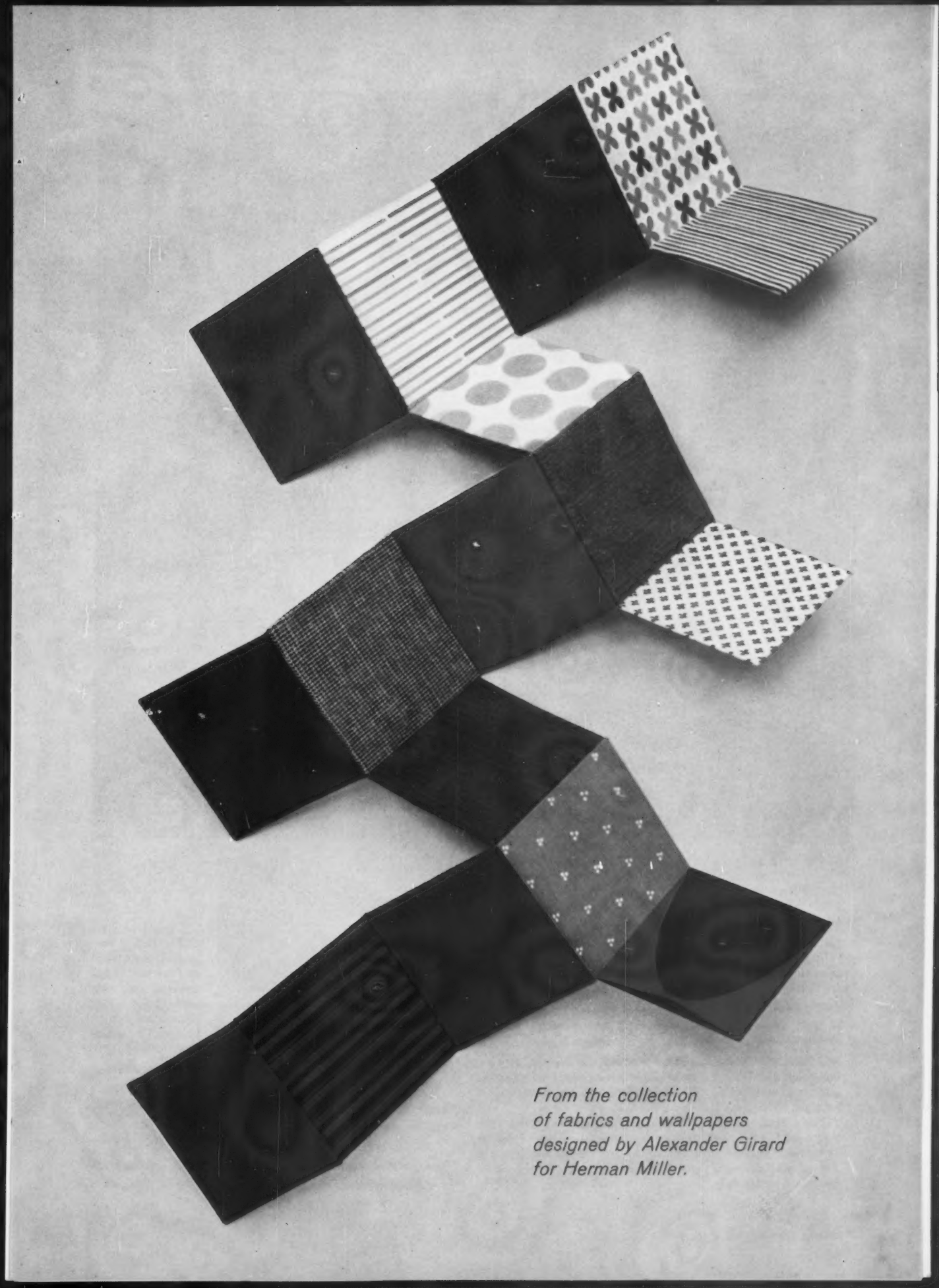

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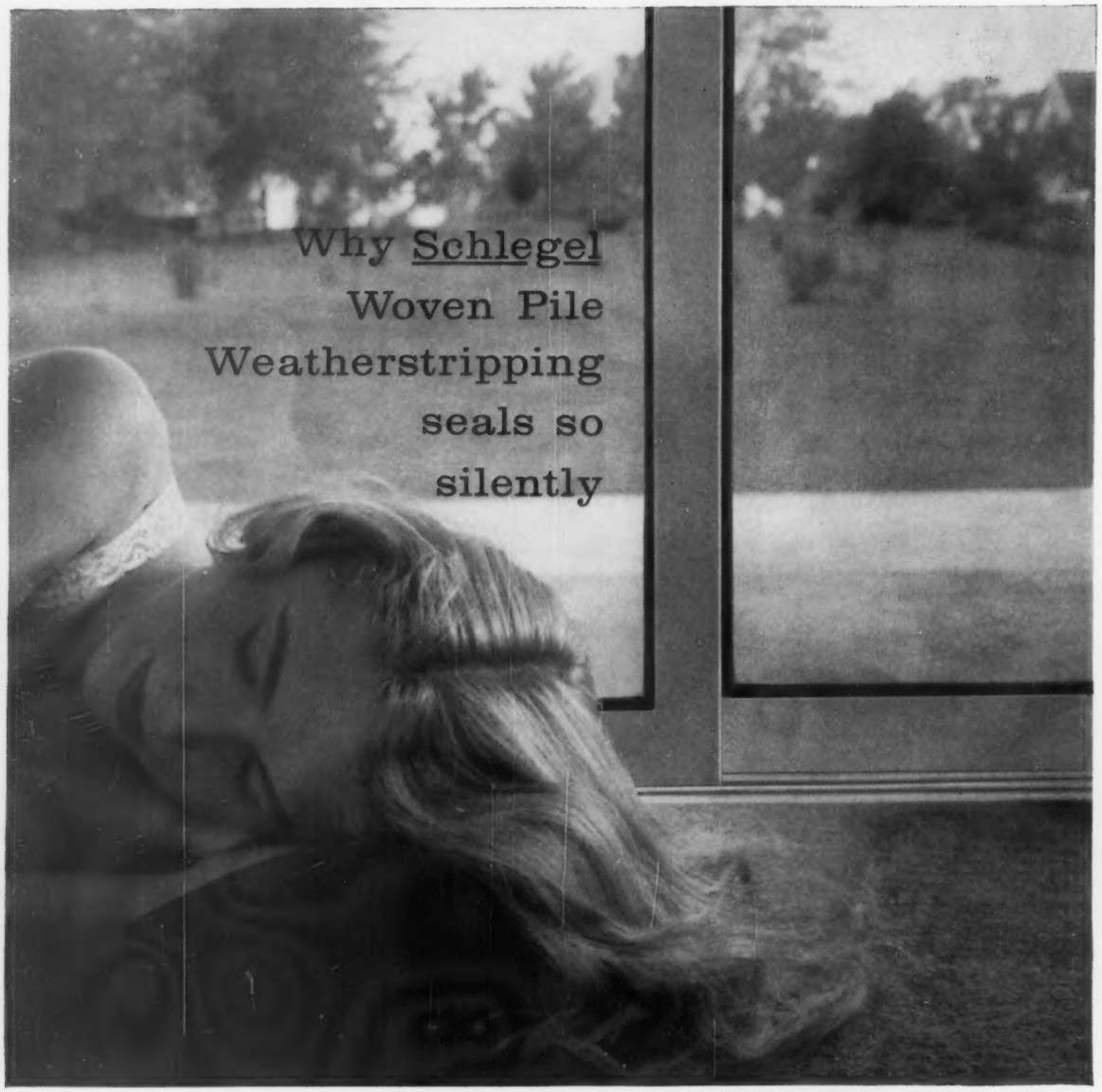

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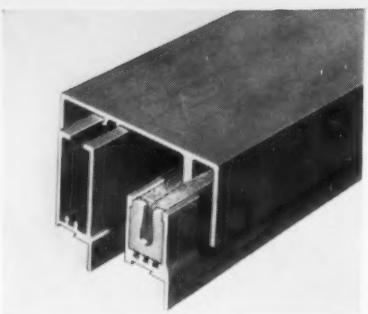

Cross-section view showing Schlegel Woven Pile Weatherstripping installed in the aluminum frame head section of Arcadia Sliding Doors, Arcadia Metal Products, Fullerton, Calif.

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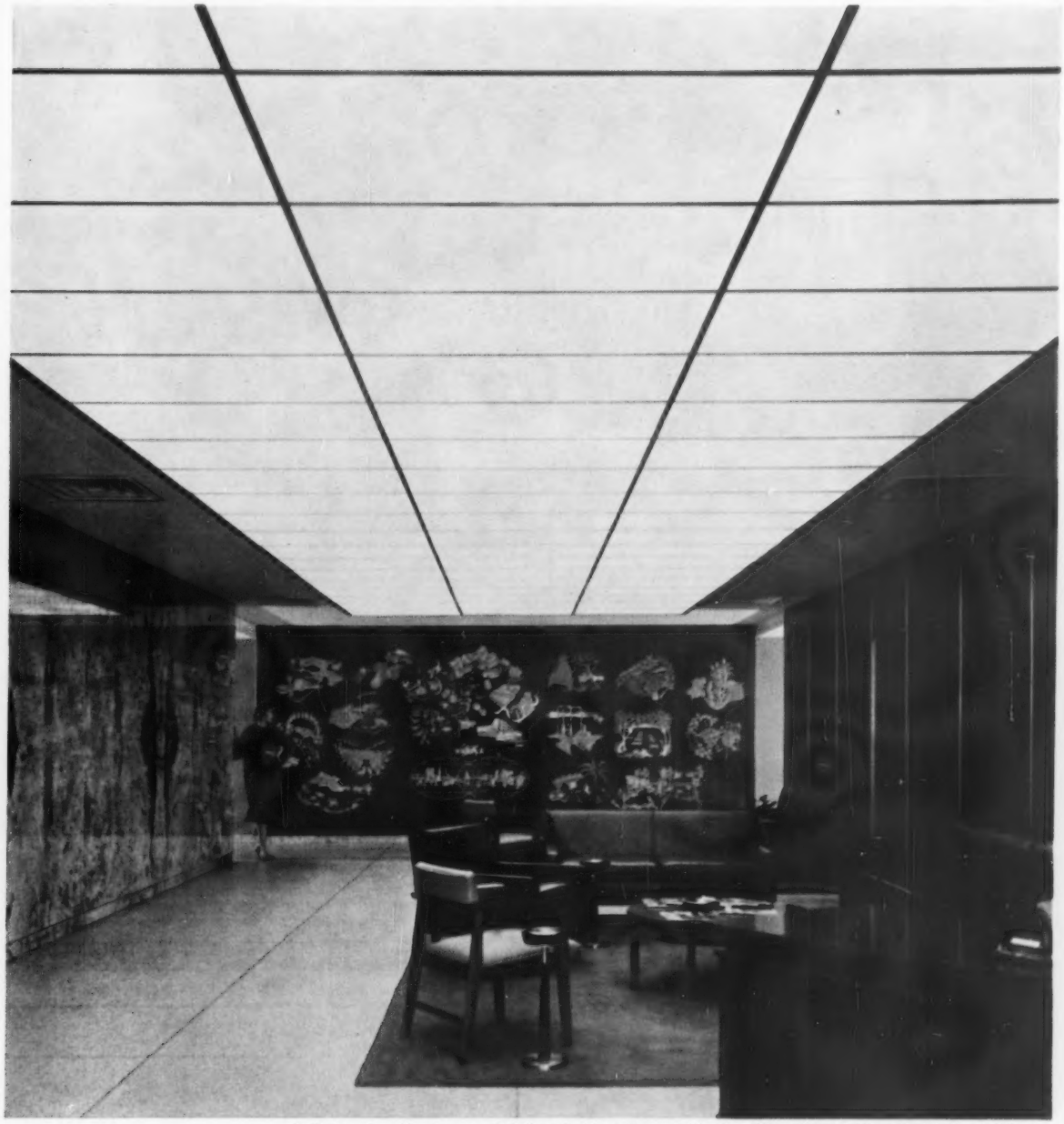

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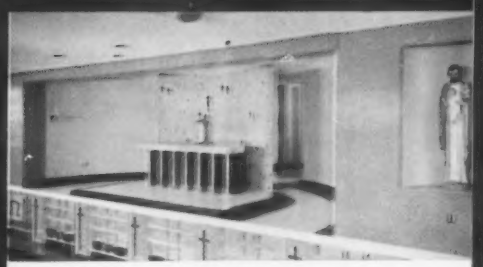

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All contractors bidding the work are bidding upon exactly the same articles.

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The underlying difference in the two types of specifications is in the application and interpretation of the word "equal". It is common knowledge that it is virtually impossible to determine with impartiality and fairness to all parties that one material is "equal" to anything else.

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80¢ - 95¢	**$1.00 and over**	**$1.00 and over**
"Futuresq" Vinyl Corlon .070" "Futuresq Supreme" Vinyl Corlon .070" Cork Tile 3/16" Rubber Tile ⅛" "Tessera" Vinyl Corlon .090" Linotile ⅛" Custom Corlon Tile 3/32"	"Imperial" Custom Corlon Tile 3/32" Custom Corlon Tile ⅛" Cork Tile 3/16"	Rubber Tile 3/16" Custom Vinyl Cork Tile ⅛" Opalesq Vinyl Tile ⅛"

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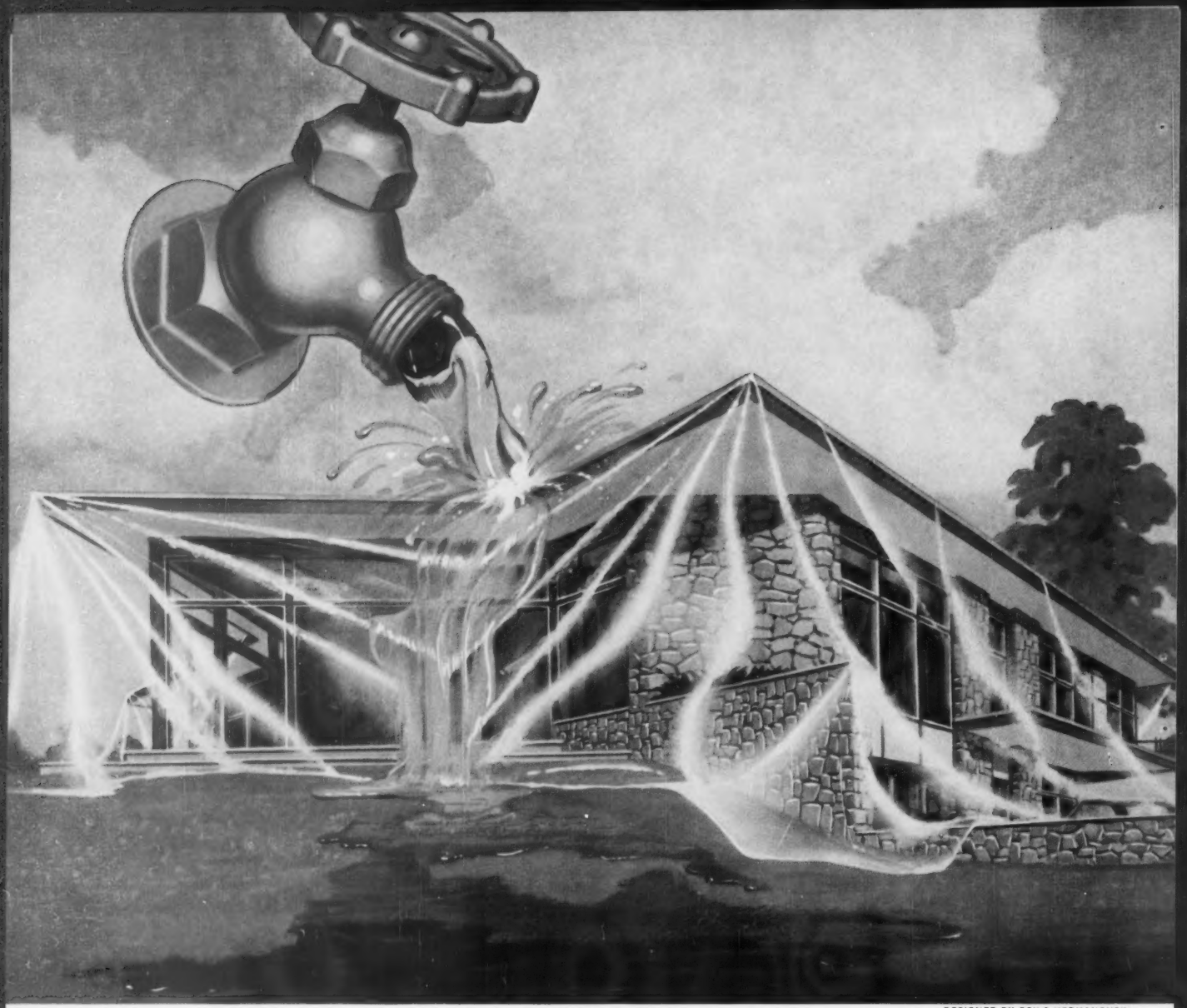

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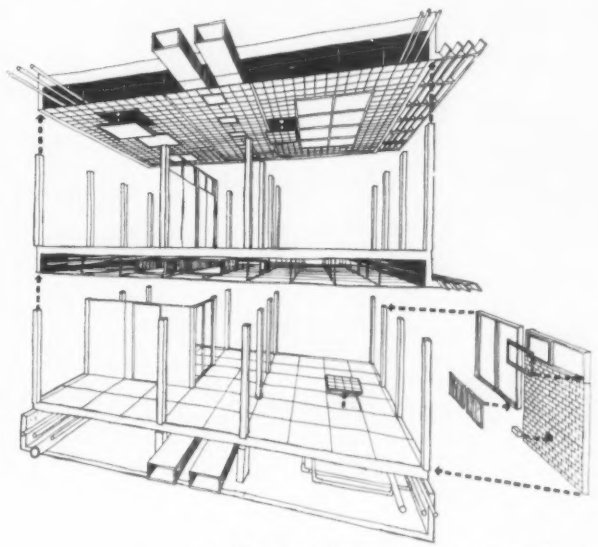
Rehabilitation Center Planning: An Architectural Guide. *F. Cuthbert Salmon and Christine F. Salmon. The Pennsylvania State University Press, University Park, Pa., 1959. 164 pp., illus. $12.50*

This is a timely and useful book and the first to describe the scope and significance of the rehabilitation center. Physical disabilities resulting from cerebral palsy, poliomyelitis, congenital deformities, accidents, and other causes require long term and specialized treatment usually not possible in the general hospital. The development of rehabilitation centers for specific physical, mental, social, and vocational training for these handicapped people is quite recent. These unique community facilities will be built throughout the country in order to return these people to a productive, responsible, and dignified life.

The text presented is clear and comprehensive and analyzes the community needs for rehabilitation and the resources that can support these centers, such as light industrial work that can be handled effectively by the patients. It describes the types of public and private agencies that are involved in the financial support of these centers. The text defines the various types of treatment and therapy for psychological, social, and medical care of children and adults covering the span from pre-school age through to geriatric cases. Speech and hearing therapies, pre-voca-

(Continued on page 190)

*Partner, Sherwood, Mills & Smith, Stamford, Conn.



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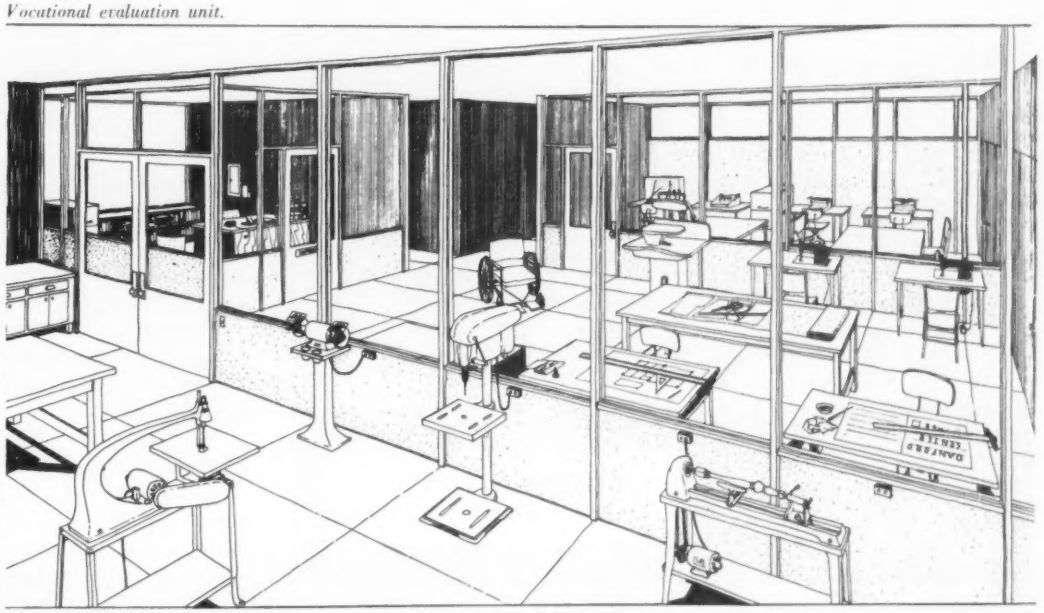
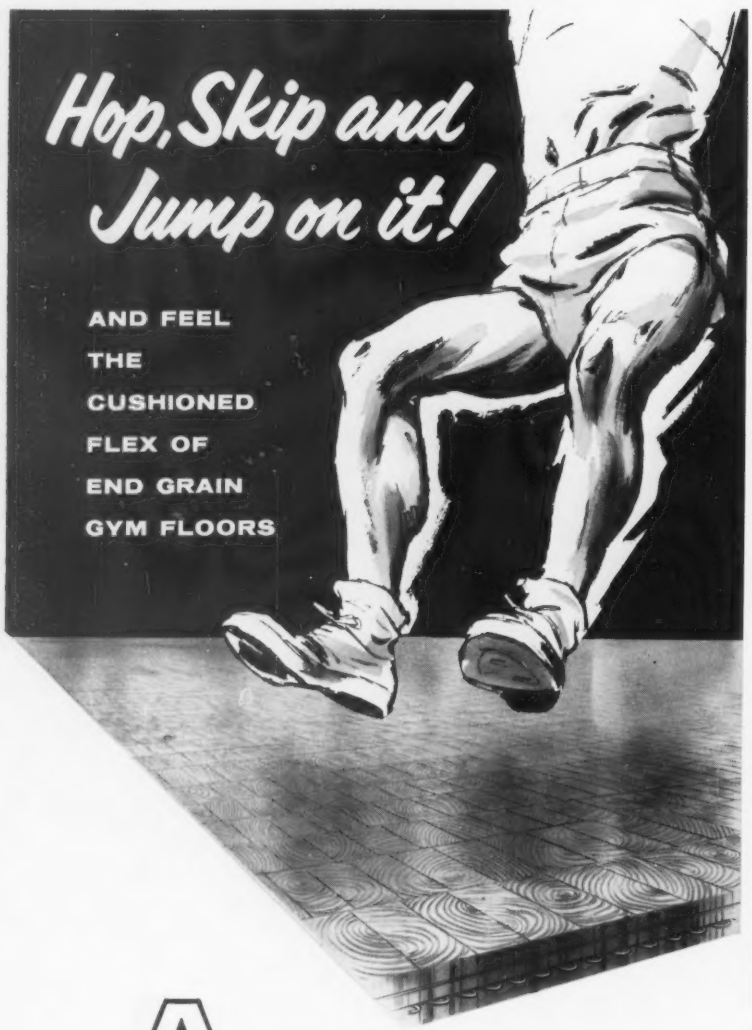


Courtesy: Pennsylvania State University Press



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FLEXIBLE STRIP END GRAIN FLOORS

reviews

(Continued from page 189)

tional testing, and vocational training are well described for the architect's general information in this special field of design requirements.

A thoughtful section on the importance of proper site selection should be of great assistance to building committees involved. The stress on flexibility of design to accommodate the changing picture of rehabilitation also is useful.

The volume has many excellent graphic aids and bubble diagrams that show interrelation of elements within each department. Plans of these elements are effective guides and form a graphic check list of patient and staff organization and of general equipment and furnishings to be included. The unique character of each center is emphasized so as to "minimize the possibility of misapplication by duplication." Certain skillful drawings of interiors convey the pleasant character so essential for the cheerful optimistic sense of recovery that can be conveyed within the enclosed or outdoor therapy spaces.

The plans and drawings are as generally useful as the excellent material recently produced by the Public Health Service relating to medical and health facilities.

Separately bound, but a part of the publication, is "Supplement 1958" which includes plans of 10 rehabilitation centers recently constructed in the U.S. and Canada. These plans and the accompanying statistics are of interest in demonstrating the very different needs of various communities. I believe, however, that in future supplements actual photographs of executed centers would dramatize the presentation and provide more realistic material for new building committees and their architects.

The only other minor reservation about this excellent guide is the very small type used, in part, which for ready reference may prove annoying. However, the general format and sequence of the book are thoughtfully and successfully designed and planned.

This book is most authoritative and was published as a result of a financial grant to Pennsylvania State University by the Office of Vocational Rehabilitation, U.S. Department of Health, Education and Wel-

(Continued on page 192)

A factory-assembled wall panel in one foot modules . . . one that is self-sealing for life by mere installation. You never caulk it. And there are no visible outside joints or fasteners to mar the surface. This is Monopanl, the most unusual curtain wall. Tongue-and-groove joints with double vinyl gaskets provide the seal. The cross section sketch shown below tells the story.

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For further information refer to Sweet's 1960 Architectural File. For complete technical details and actual samples of Monopanl, contact your Butler Builder. He's listed in the Yellow Pages under "Buildings" or "Steel Buildings." Or write direct for a descriptive brochure and data sheets.

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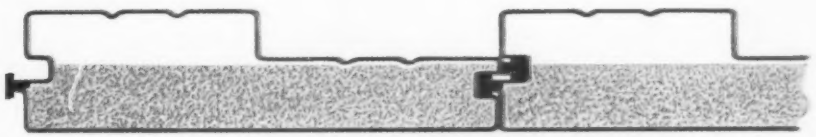

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Amtico
VINYL FLOORING

reviews

(Continued from page 190)

fare. It incorporates ideas and opinions of many dedicated people, including an advisory panel of distinguished directors of leading rehabilitation centers, top officials of the Office of Vocational Rehabilitation, and the Public Health Service in Washington. Other consultants for this work were architects closely connected with the field of rehabilitation, as well as members of the Pennsylvania State University faculty. The Salmons, as co-authors, are to be congratulated for a scholarly, comprehensive, and most useful book which already is of value to architects, administrators, and building committees.

one set of laws?

Der Raumsatz. *Wolfgang Th. Otto. Deutsche Verlags-Anstalt, GmbH., Box 209, Stuttgart 1, West Germany, 1959. 144 pp., illus. DM. 32*

The author's purpose, as indicated by the title which is translatable as "Grammar of Space," is to define certain fundamental laws governing architectural design. It is Otto's belief that the successful architectural arrangement of space is subject to a series of fixed laws. These laws are equally applicable to the Greek temple, the Baroque church, and to Frank Lloyd Wright's houses.

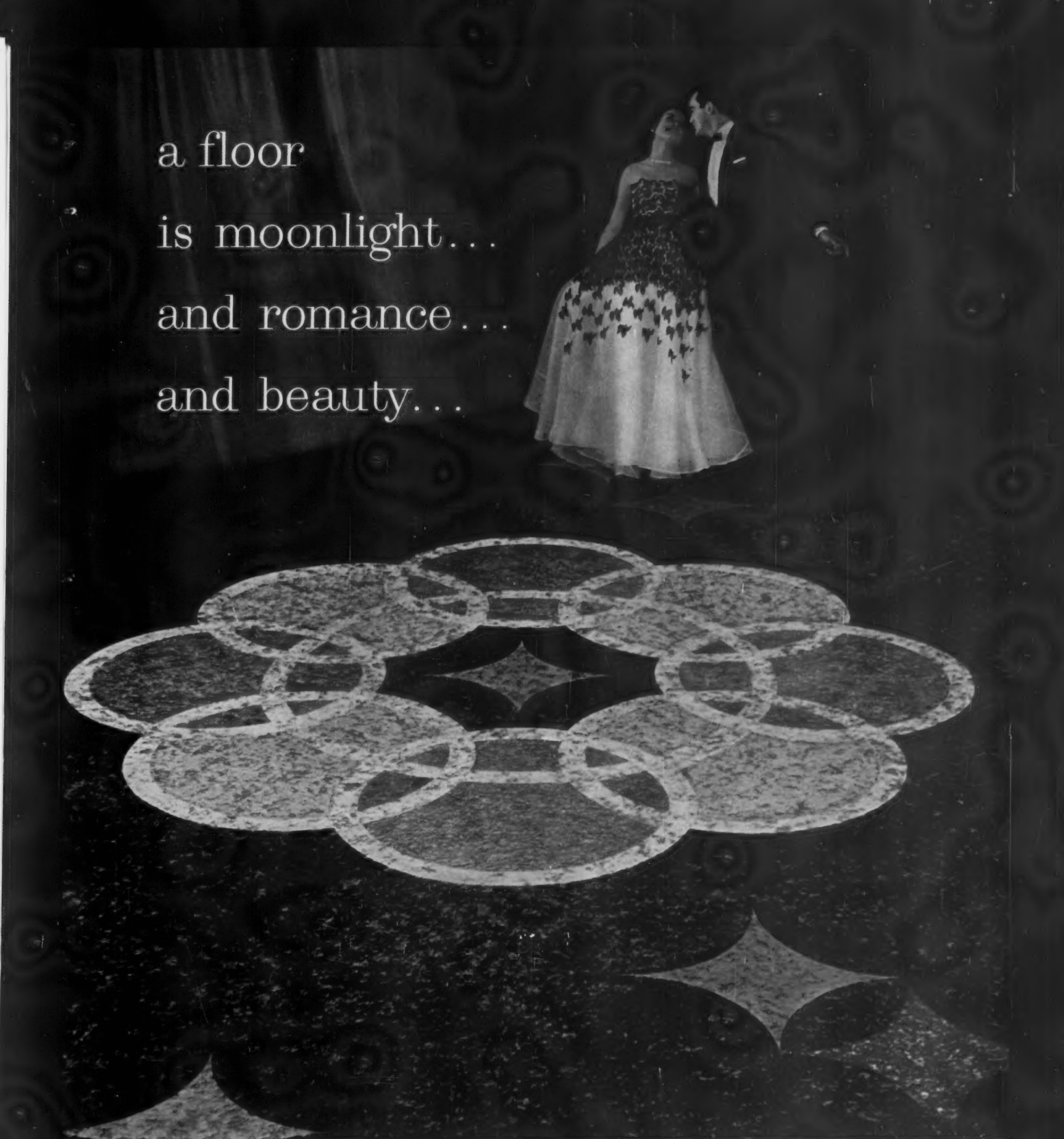
The entire text revolves around the author's attempt to prove the existence of such an architectural body of laws or grammar and to show its validity for any and all structures. In support of his theory, Otto has furnished some 66 photographs of models showing the arrangement of forms according to the laws which he has uncovered. A number of these forms are striking artistic creations, others are reminiscent of Wright's Robie House, Corbusier's Chapel at Ronchamps, and various creations of Mies van der Rohe. All share a common preoccupation with the spatial relationship of forms and, in one section entitled "Rythmik," with flowing lines strongly reminiscent of Baroque.

The question as to how far one is willing to accept the author's rules is debatable: Otto is sincere and this type of speculation is valuable. Architecture would greatly benefit if there were available rules which would guarantee satisfactory results. The question is not as to the usefulness of such rules, but rather as to whether any one set of rules is universally acceptable. Architecture, in the last analysis, is art and artistic expression is the height of individuality. It is hard to visualize one set of laws applicable to architects and artists as a group.

There is also "taste" to be considered. Taste is an artificial creation. At times it has given its endorsement to Victorian gingerbread, Rococo curlycues, and the 20th Century skyscraper. To cover these variations would require the formulation of a set of laws applicable to all periods and styles. The result would be rules so general as to be of no practical value. A number of the laws uncovered by Otto are of this type. This includes observations such as that buildings ought to have a dominant feature, a core form, or that their various parts must stand in an integrated relationship to each other. Remarks that there can be "Harmony," "Counterpoint," and "Drama" in the spatial relationship of forms, are stating the obvious. A building, to be successful from an architectural viewpoint, contains at least a number of these elements but they have been incorporated in the structure by the architect and the differences in their form can be as wide as the designers' personalities are divergent.

The author's attempt to erect a "Grammar of Architecture" will find a mixed reception, but some of the views advanced in connection with the attempt will strike responsive chords. Otto points to the grave problem facing architecture today. Is architecture going to survive as an independent art? Will it prove capable of subordinating technology and science to the esthetic? Otto believes that it can and that it must as the alternative would be architecturally embellished engineering. He feels that architecture needs to clarify its own position and function to survive, hence the attempt to formulate laws. The author makes interesting comments

(Continued on page 194)



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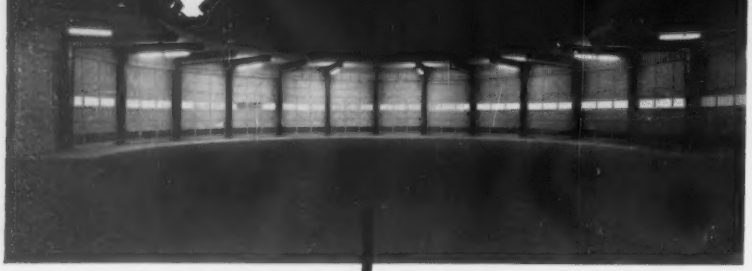

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reviews

(Continued from page 192)

as to the difference between real architecture, the handling of space, and much of today's pseudo-architecture, namely the ornamenting of exterior walls. There is a number of fascinating philosophical excursions into such topics as space as an extension of the human self, or on the relationship of musical concepts to structure.

This book will appeal to those interested in esthetics, art criticism, and in architecture as an abstract concept. Practicing architects, aside from the language problem, will probably find it too abstract.

DR. FREDERICK HERMAN
College of William and Mary
Norfolk, Va.

the reasons why

Offices in the Sky. *Earle Shultz and Walter Simmons, Bobbs-Merrill Co., Inc., 717 Fifth Ave., New York, N. Y., 1959. 328 pp., illus. $6*

This is a new sort of book on office buildings. It gives the inside story of how they came into being and how they work. It is not exactly architectural or historical, although there is plenty of information in both fields. To this reviewer, it seems that the reader who would be most interested in this book and profit most by it would be contractors, building superintendents, and architectural students. Teen-age sons of men who have their offices in the sky would also enjoy it.

The accounts of the development of the elevator, the office manager, and early cost-estimate surveys are informative. Earle Shultz was the first to start a building planning service. These authors write from their own experiences and these have helped make office building what it is today.

Every large office housed in a skyscraper should have a copy of this book, so that if any of the employes wonder that they work in the sky, they may learn the reasons why.

AGNES A. GILCHRIST
Mount Vernon, N. Y.

(Continued on page 200)

Library entrance, University of Louisville, features large panes of *Parallel-O-Plate*® Glass.
Architects: O'Connor & Kilham, New York, N.Y.; Nevin & Morgan Assoc., Louisville, Ky.

Social Science Building on Shipp St. is typical of the architecture of some of the buildings which date back to 1869.

LOF GLASS *visits a university . . .*

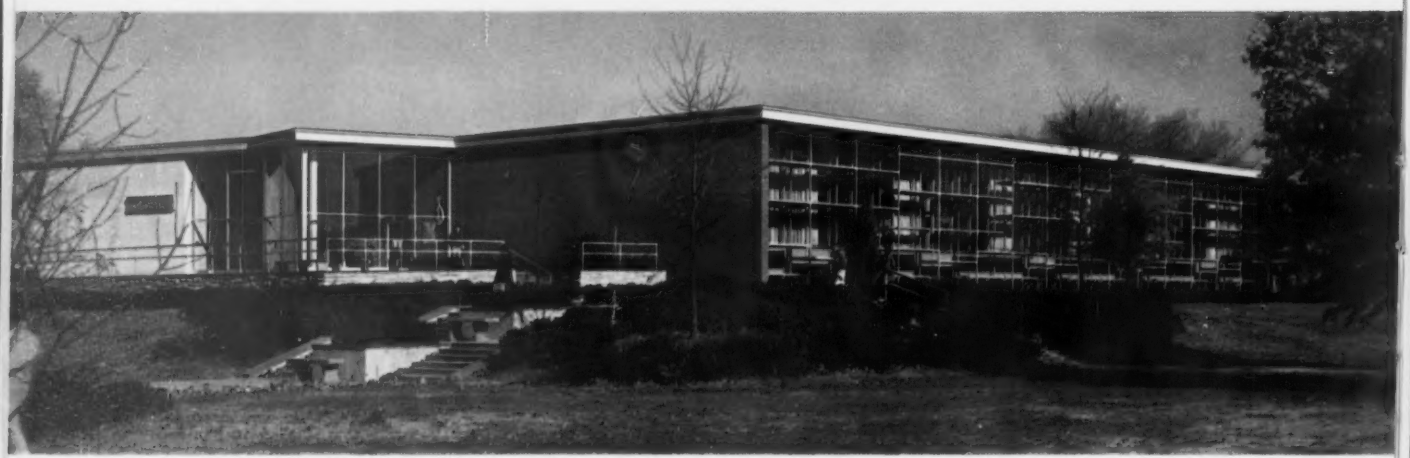
where architecture doesn't stand still

University of Louisville's Belknap Campus is a revelation in architectural development.

The older buildings (some dating back to 1869) are predominantly Georgian in style . . . solemn brick structures with narrow windows. But on one edge of the campus is a classic Grecian museum. And at the other edge stands a natural-science building that might be called modern transitional.

In the middle of this group are two startling, new, contemporary structures which, through skillful and imaginative use of color, form and expanses of glass, dominate and enliven the whole campus. These are the University Library (dedicated July, 1958) and the University Center Building (dedicated January, 1959). To find out more about these exciting buildings and how they

University Center Building, erected in 1959, is glazed with *Thermopane*® insulating glass with *Parallel-O-Grey*® in the outer pane. Architects: Hartstern, Louis and Henry, Louisville, Ky.



University Library, erected in 1958, features big areas of *Parallel-O-Plate* Glass, twin ground for greatest freedom from distortion.

DR. PHILIP DAVIDSON
President
University of Louisville

are functioning, we sought out the University's President, Dr. Philip Davidson.

Question: Why did you depart from the traditional style of architecture?

Dr. Davidson: Why should a campus be tied to one kind of architecture? Why shouldn't the buildings reflect the history of a growing institution? We expose our students to modern art, literature, and sciences; why not expose them to changes in design philosophy, too? On the practical side, we couldn't have bought as much functional space with a traditional design.

Question: How have the buildings been received by the public?

Dr. Davidson: They've been received with great enthusiasm right from the start. They've given a real lift to campus morale and to the community. I believe they have helped increase enrollment and faculty recruitment.

Question: And all those glass walls?

Dr. Davidson: They're a real joy! We like bringing the outdoors in. It gives a new dimension to space, and a feeling of freedom.

Question: What are the practical aspects of glass?

Dr. Davidson: Now you're getting into an area that I think Mr. Woods, our Assistant Superintendent of Buildings and Grounds, is more qualified to answer. Why don't you talk to him?

WADE A. WOODS
Assistant Superintendent
of Building and Grounds

Question: Mr. Woods, I understand that the window walls in the new University Center Building are *Thermopane*® insulating glass with a ½″ air space between plate glass panes.

Mr. Woods: Yes, and you'll notice that the outer pane is made of grey plate to reduce strong sunlight and glare.

Question: Has *Thermopane* helped reduce your heating and air-conditioning costs?

Mr. Woods: It's hard to measure, because all our buildings are supplied from one central power plant and we have no flow meters. But I can tell you this. When people in the other buildings are calling for heat, the people in the University Center Building have theirs shut off.

Question: How about maintenance?

Mr. Woods: As far as upkeep maintenance goes, we don't expect to have any. After all, glass doesn't wear out.

The spandrels in the University Center Building are *Vitrolux*® glass which has color applied to the back. Dirt doesn't show nearly as readily, I've discovered, as on surface-colored materials.

Question: What did this building cost per sq. ft.?

Mr. Woods: I'd rather you ask the architect that. He's right here in the city.

FREDERICK R. LOUIS
OF HARTSTERN,
LOUIS AND HENRY
Architects

We found Mr. Frederick Louis, of Hartstern, Louis and Henry, in his office and asked him about the construction cost.

Mr. Louis: The University Center Building contains 68,800 sq. ft. We figure it cost $17.08 per sq. ft. including plumbing, heating, air conditioning, electrical work and automatic sprinklers.

Question: Why did you specify *Thermopane* for this building?

Mr. Louis: Well, you see, we have temperature ranges from 0° to 100° in Louisville. We specified double-glazing for the comfort of those using the building. Another consideration was the load on the central power plant which was reaching its limit. We were able to add this building without enlarging the heating system. Another factor was the location of the building near an expressway. Double-glazing helps to shut out traffic noise.

Question: You specified grey glass for the outer pane in the double-glazed walls. Would you mind telling why?

Mr. Louis: Not at all. Mainly to reduce intense sun glare. Also, to do away with overhangs which would run up construction costs and might detract from the architecture. And it permits people inside a certain amount of privacy. There's still another reason. In a building this size, draperies of different colors and designs are often used in different areas. Grey glass tends to minimize these contrasts which would otherwise disturb the building's design unity from the outside.

Question: One last question. Why did you use glass spandrels?

Mr. Louis: Because we didn't want a contrast in texture between spandrels and windows. We liked the reflective qualities of grey glass (it's quite exciting), and we wanted to retain a relationship of reflectivity in the spandrels, too.

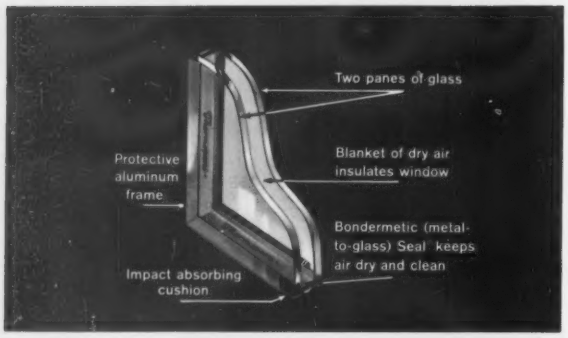
All in all, it has been a real pleasure working on this project. You know that the University of Louisville is the oldest municipal college in America (and has the largest adult-education enrollment in the state). But they're tremendously progressive—an attitude we've tried to catch in our contribution to the campus.

Façade of glass. Even the spandrels are glass—*Vitrolux*® heat-tempered polished plate glass with ceramic color fused to the back.

Auditorium and multi-purpose room in the University Center Building looks out on campus through *Thermopane*.

This plate glass window wall was purposely planned to capture the beauty of the giant cypress tree it frames.

Cafeteria in University Center has window walls of *Thermopane*, with *Parallel-O-Grey* as the outer pane to reduce glare. Notice that grey glass does not affect the color of objects seen through it.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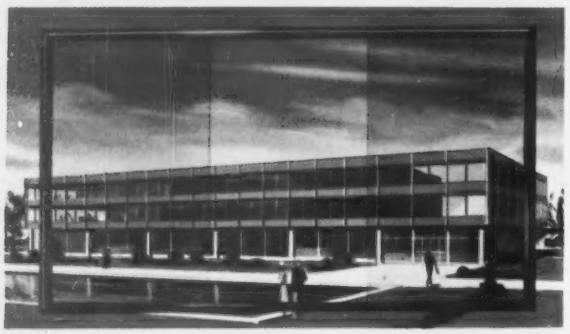
Recommended for gymnasiums, entrance doors and sidelights, rooms facing recreation areas . . . any place where students and missiles are in rapid motion.



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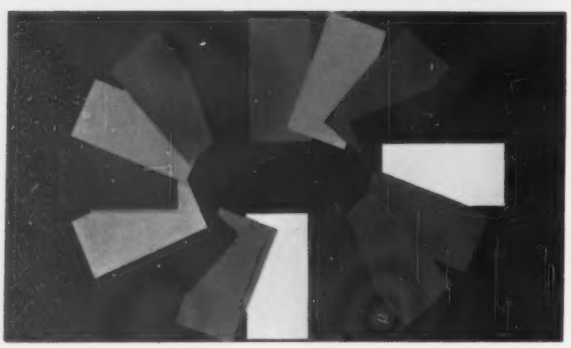

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OZALID NEWSLETTER

NEWS AND IDEAS TO HELP YOU WITH ENGINEERING REPRODUCTION AND DRAFTING

Repro room at I-T-E, showing processing of Information Sheets and standard engineering drawings on Ozalid machines. Simple system saves hours of drafting time for the company.

Short-cut system for custom orders

To help turn out "job shop" work at assembly line speed, the I-T-E Circuit Breaker Company of Philadelphia has devised a simple "Information Sheet" that does away with considerable retracing and revising of engineering prints.

More than 70% of I-T-E orders are for custom-designed equipment using standard components. Revising standard drawings to meet customer specs on each order would saddle I-T-E's engineering department with a nearly impossible work load.

So the Information Sheet is used instead. It's an 8½" x 11" tracing form—with printed title blocks—quickly reproduced on the company's Ozalid whiteprinters. Here's how it works:

An order comes in—for 5KV metal-clad switchgear, for instance. A fast freehand sketch of the switchgear is drawn on the Information Sheet. Drawing numbers of standard components and quantity of prints needed are noted on the Sheet.

Then, copies of the Sheet and the required standard drawings are run in the I-T-E repro room. These, with the shop order, go to Manufacturing. When the order is completed, the Information Sheet is returned to the customer file for reference.

This simple short cut with Ozalid whiteprinting saves untold hours of engineering time and gives I-T-E customers faster, more efficient service.

Colors speak louder than words

A simple way to make your security personnel's job a lot easier is to color-code all classified material by using Ozalid sensitized color-copy papers. Colors don't have to be read. Guards can spot restricted or top-secret prints at a glance. Clerks can't make routing mistakes.

To help you devise your own color-coding systems, Ozalid offers papers with eleven image-and-stock color combinations. For example, use black image on yellow stock (instead of traditional blue on white) to code prints of preliminary drawings. Potential uses for color-coding in engineering paper work are virtually unlimited: shop orders, bills of material, spec sheets, change notices, cost estimates, etc., etc.

Like a copy of our new Color-Coding Booklet? It tells how a truly versatile, full-range color-coding system can be yours with as little effort as it takes to run prints that are black on white.

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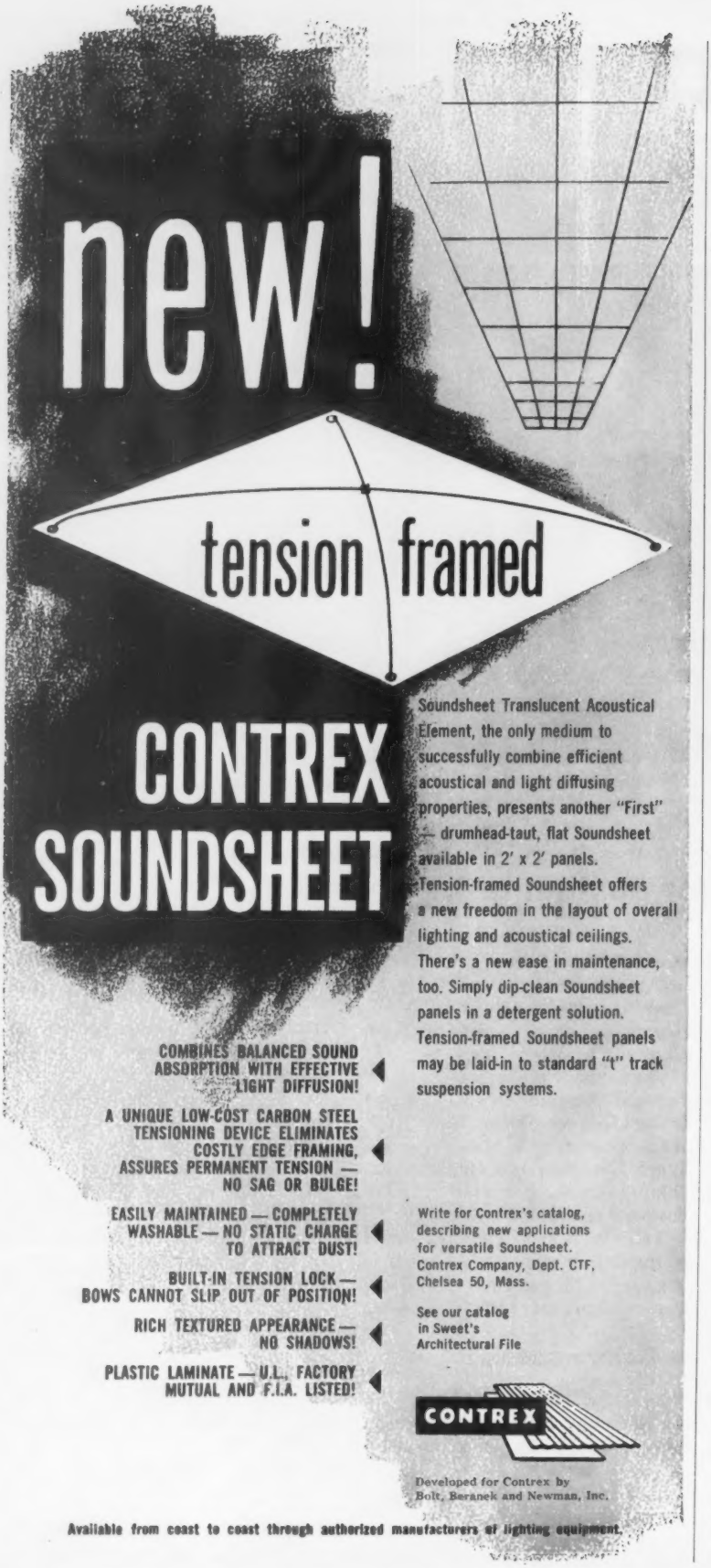
New blue-tint Ozacloth cuts glare, saves eyes

It's bad enough to have *people* glare at you. When your drafting materials glare too, one should take steps. Our research people have—by building a delicate blue tint into our new black-line Ozacloth 101 CZB. It provides excellent contrast between background and dye image—cuts glare, reduces eye strain, makes duplicate originals that are easy to read and work with. Other features? Highest printing speed of any cloth intermediate . . . and a plastic matte surface *on both sides* which accepts pencil, ink or typewriter . . . and keeps sheets from sticking together in files. Write Ozalid at Johnson City, New York, for free descriptive literature on blue tint Ozacloth.

***Ozalid**—Division of General Aniline & Film Corp. • In Canada: Hughes-Owens Co., Ltd., Montreal*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Available from coast to coast through authorized manufacturers of lighting equipment.

reviews

(Continued from page 194)

a design philosophy

The Collected Writings of Alvin Lustig. *Edited and published by Holland R. Melson, Jr., Dept. of Graphic Design, Yale University, New Haven, Conn., 1959. 96 pp. $3.50. Copies available from Melson, 1215 Park Ave., New York, N. Y.* Philip Johnson, in the introduction, writes this about Alvin Lustig: "I don't know of anybody on the contemporary scene who unites in one person all these facets . . . part architecture, part industrial design, part typography, part advertising—and all of it art. . . . There is no one to take his place . . ."

This small collection of articles gives the reader only a brief glimpse of the late designer, Alvin Lustig, but that glimpse is a rich and interesting one. The articles seem to say more than their briefness would imply. Each stimulates thought—making the reader review and perhaps revise his ideas on these subjects: graphic design, the field of design education, contemporary book and magazine typography, trademark design, and architecture.

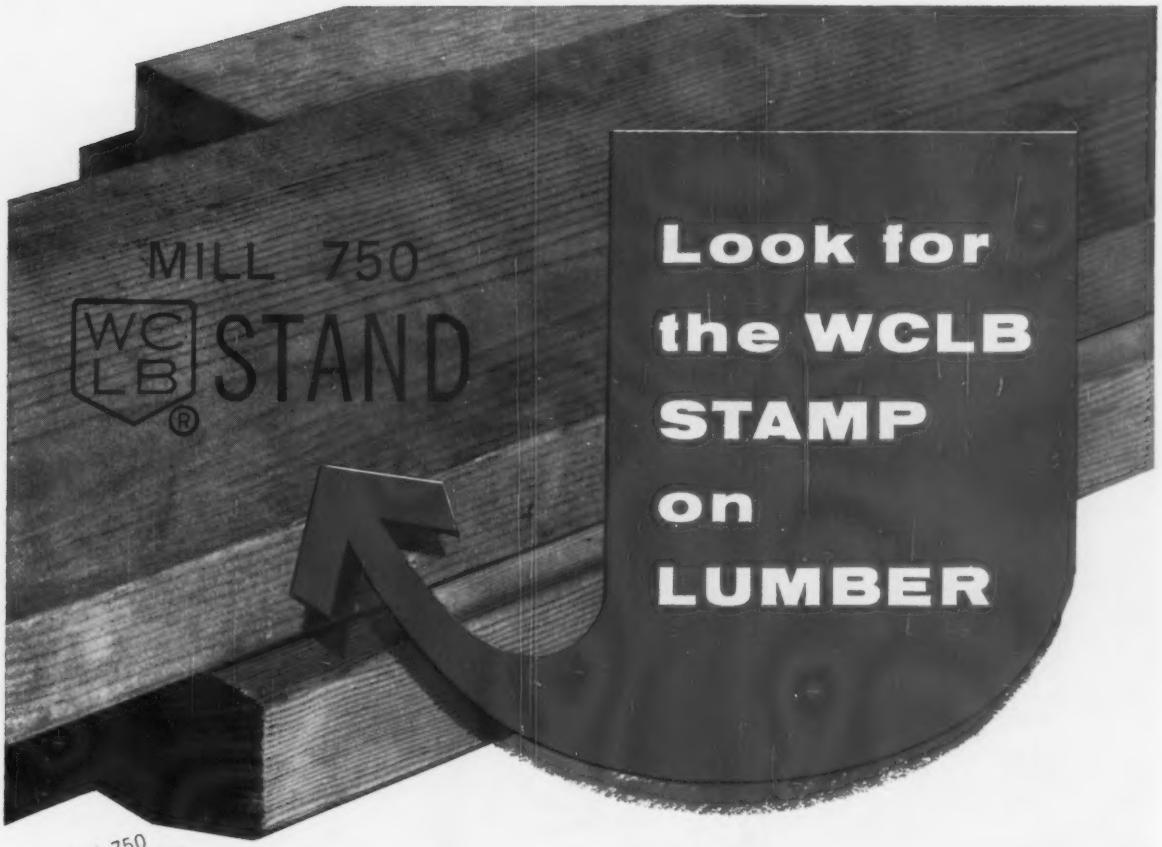
Some of the thoughts: *On the subject of educating designers*—the disparity of design-school thought and training vs. the practical world, with the latter (surprisingly) leading in experimentation and research, in theoretical as well as practical knowledge. Lustig gives an outline for a program of design for University of Georgia and a workshop in graphic design for Yale—the consideration of either syllabus would benefit other design schools.

On the role of the designer—to translate the values of life, including both tradition and new techniques, into visual public (not personal) symbols.

On *The Architectural Review* (of special interest to architects who share his appreciation of this publication)—its typography—using a variety of papers, types, and layouts—achieves a refreshing visual experience, unique among today's cultural magazines.

Two words which stand out in Lustig's writing are *visual* and *vitality*. He stressed the need for new visual design

(Continued on page 208)



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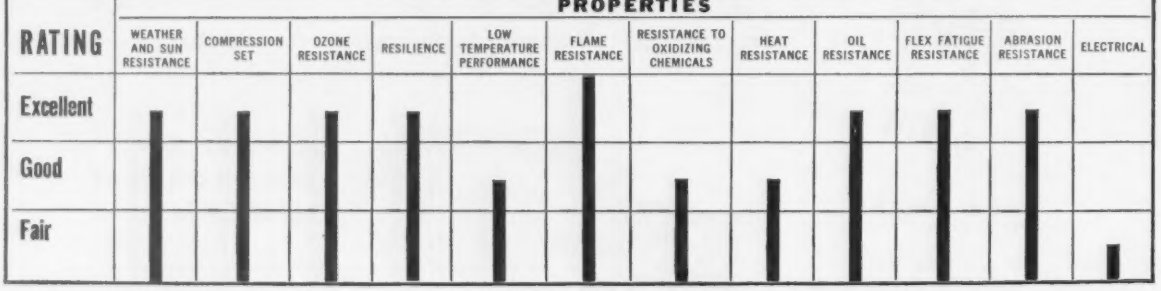
In new Lockport, N. Y., elementary school...

THESE LIGHTS WERE GLAZED

Anna Merritt Elementary School, Lockport, New York, covers an area of 17,111 sq. ft., features a new aluminum framing system with a neoprene seal that eliminates caulking.

THESE PROPERTIES OF NEOPRENE HELP THE ARCHITECT GAIN LONG-LASTING, EASILY-INSTALLED WEATHER SEALS



3 TIMES FASTER THAN NORMAL

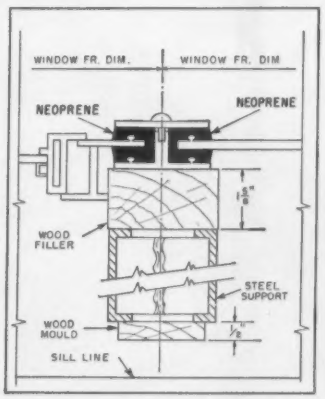
For the new Anna Merritt Elementary School (shown in photo) and the Roy Kelly Elementary School in Lockport, New York, architects Sargent, Webster, Crenshaw & Folley, Syracuse, N. Y., developed an ultra-thin aluminum mullion (only 1¾ in. wide) which, in combination with a prefabricated neoprene synthetic rubber sealing gasket (a special gasket designed with Patent Pending) gives the exterior wall a trim, modern appearance . . . speeds glazing . . . and cuts maintenance.

GLAZED IN A DAY AND A HALF. This modern neoprene-sealed glazing system requires no tool more complicated than a screwdriver . . . permits precision factory manufacture of all components . . . eliminates chance for error or careless workmanship in caulking . . . insures a clean, neat glazing job. The contractor estimates that, with the preformed neoprene gasket, installation moves three times faster than conventional glazing. The 17,111-sq.-ft. Merritt School was completely glazed in just a day and a half. Kelly School—2½ times as large—was glazed in 3½ days.

LASTING SEAL. A properly compounded neoprene gasket will perform efficiently for decades in this application. It resists weather, sun, ozone, heat, cold, chemicals, pressure . . . stays resilient and maintains a tight seal . . . protects glass against wind breakage . . . can be re-used if a window is broken. Neoprene's excellent combination of properties is shown in the graph on the opposite page.

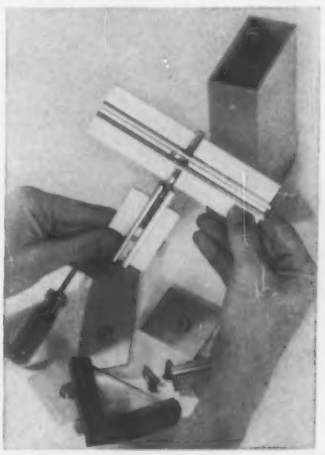
For more information on neoprene gaskets, write to: E. I. du Pont de Nemours & Co. (Inc.), Elastomer Chemicals Department PA-2, Wilmington 98, Delaware.

This glazing system is sealed against weather by a prefabricated neoprene rubber gasket.



Neoprene gasket is Pawling Rubber Corporation's "Wet" Seal Channel

STEP 1—The simple, durable aluminum frame (only 1¾ in. wide) is assembled quickly and easily.



ONLY A SCREWDRIVER IS NEEDED!

STEP 2—Resilient neoprene seal snaps easily over glass, then gasketed light can be set in place in frame.

STEP 3—Screwing down of pressure strip against neoprene gasket assures a durable, weathertight seal.

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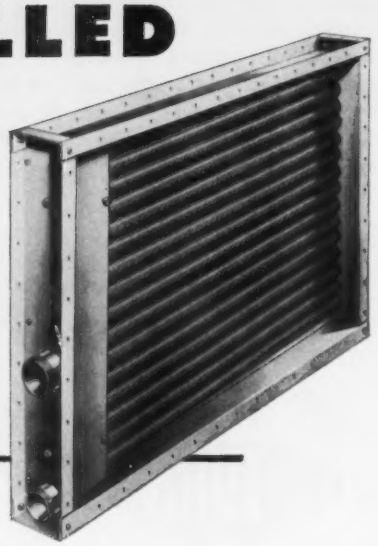

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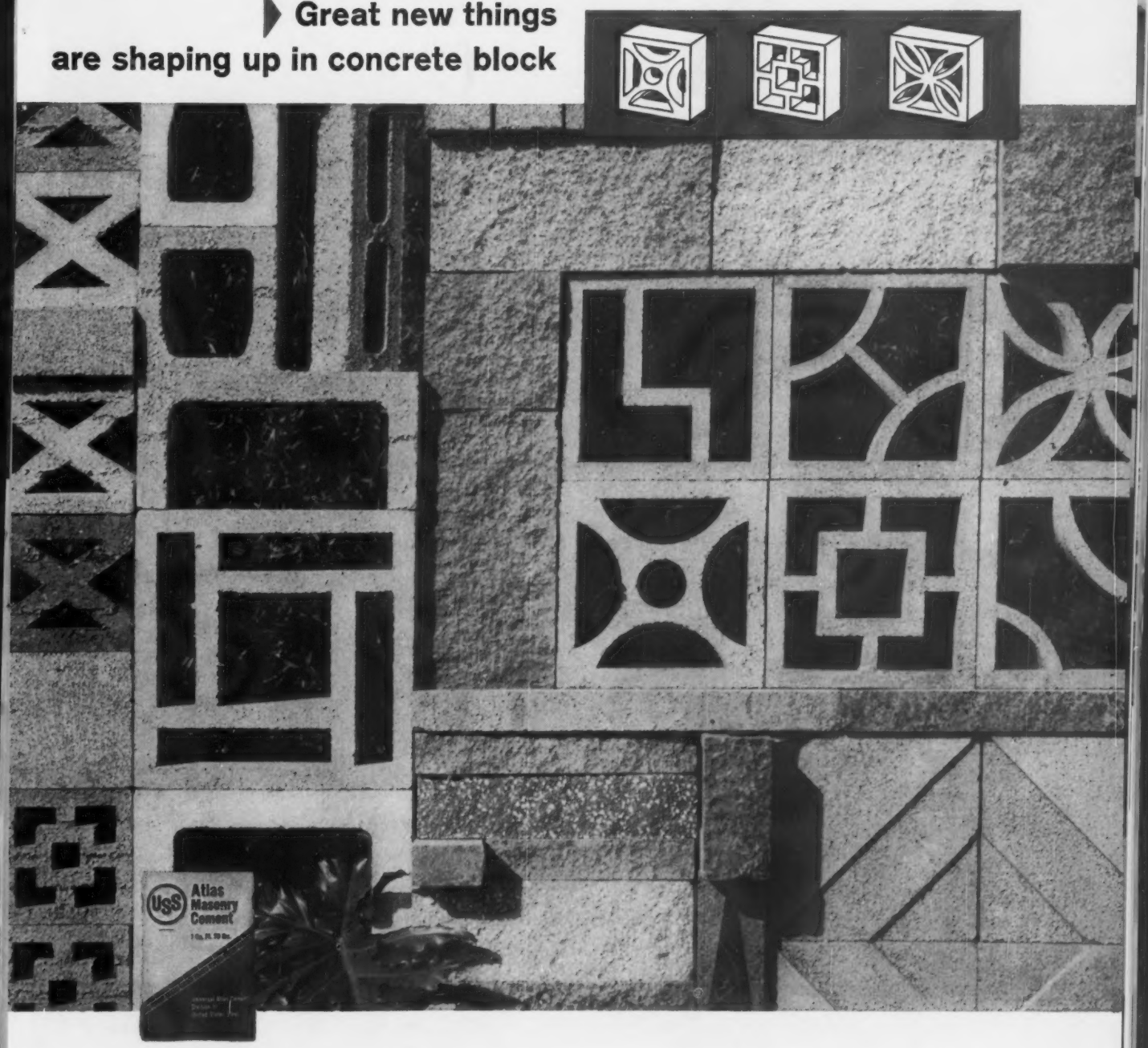
Great new things are shaping up in concrete block



Atlas Masonry Cement measures up to the new masonry

whose range of patterns, shapes and textures is suggested in this block grouping by Architects D. Wallace Benton and Donald G. Park of Los Angeles. To lay up these striking new concrete block, Atlas Masonry Cement continues to be the preferred cementing material for mortar. It provides a smooth, workable mortar, assures a stronger bond, gives weathertight joints that are uniform in color. And Atlas Masonry Cement complies fully with ASTM and Federal Specifications. For information write: Universal Atlas Cement, Dept. M, 100 Park Avenue, New York 17, N. Y.

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INTERIOR PLANNERS & DESIGNERS: DESIGNS FOR BUSINESS, INC., NEW YORK, N. Y. THE BERKSHIRE LIFE INSURANCE BUILDING, PITTSFIELD, MASS.

3,893 ft. of movable Aetnawall-A almost entirely replaced interior masonry walls throughout the working and executive areas in the new Berkshire Life Insurance Building, Pittsfield, Mass. A wide range of partition panels gave unusual flexibility to

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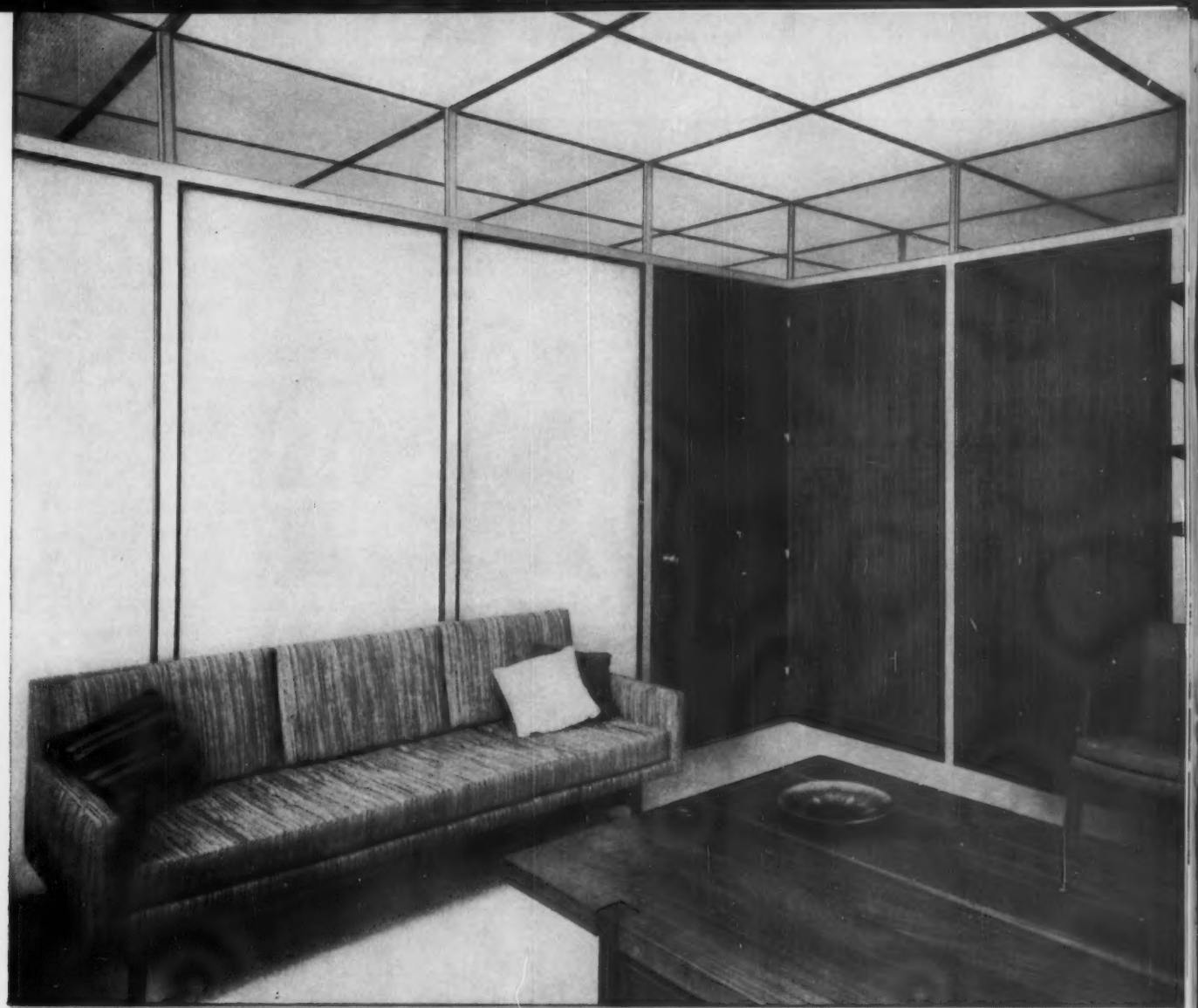

office and storage areas, cafeteria and second-floor lobby. Interchangeable partitions were panelled in paldao wood, rosewood; clear and milk glass and unpolished plateglass; custom-colored as well as plastic-covered steel. For complete information on all Aetnawall partitioning, write for new, 1960 catalog.

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St. Michael's Lutheran Church, Traverse City, Mich. Architect: Orus Eash, Traverse City, Mich. Rilco deck completes the roof. Rilco parabolic arches span 32' 1", spaced 14' o.c. Center height 30' ¼". Six laminated beams are up to 56' 3½" in length.

"Finest Beams We've Ever Worked with"— Rilco

Design possibilities are as flexible as the imagination when Rilco laminated wood arches, beams are suggested. Witness St. Michael's Lutheran Church, Traverse City, Michigan, the work of Architect Orus Eash. The contractor, Leonard Anderson, was also pleased. "They are the finest beams we ever worked with," he writes, "they fit perfectly and took on a beautiful finish."

Flexibility of design, economy, a special warmth and beauty—all good reasons why Rilco laminated wood is specified for more and more buildings of every type.

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reviews

(Continued from page 200)

principles which would give our life more meaning and validity—and he helped to find them. He placed importance on the word vitality in praise of others—we should use it in praise of him.

Those who knew Lustig personally or who know his work, will appreciate owning this collection. Someone meeting Lustig for the first time through these pages will find it stimulating. To either reader, the book is fully worthwhile.

A word of praise should also be given to Holland Roberts Melson, Jr., graphic designer of this book, for the manner in which the collection is organized and presented, the helpful listing of articles by and about Lustig, and a concise chronology of his life. The book cover, showing only a black-and-white photograph of Lustig, penetrating and intense, is highly effective.

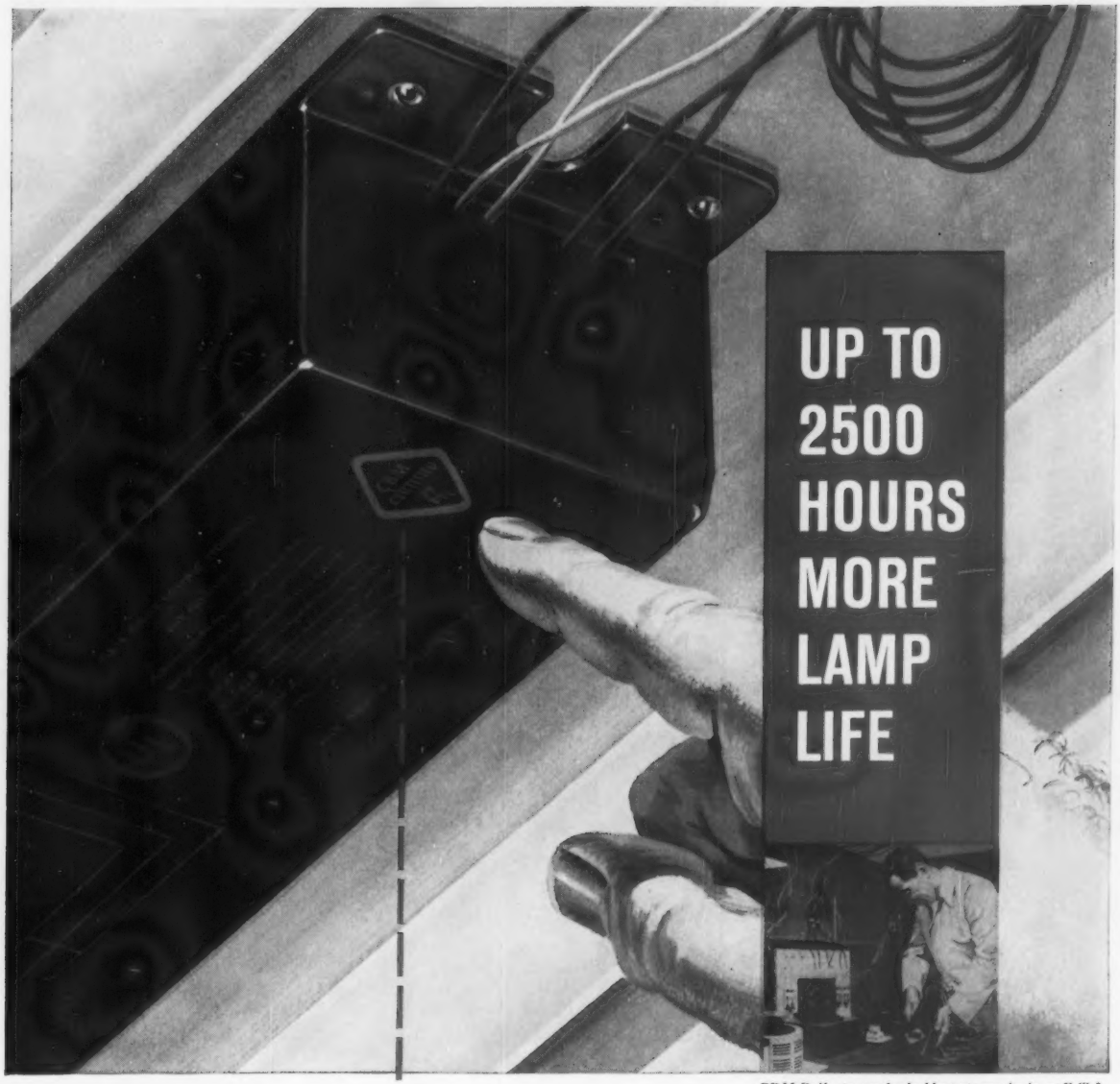
ADELAIDE LEWIS
Greenwich, Conn.

salvation—or end?

Wendepunkt im Bauen. *Konrad Wachsmann. Krausskopf Verlag, Wiesbaden, West Germany, 1959. (Distributed in U.S. by Wittenborn & Company, 1018 Madison Ave., New York 21, N.Y.). 260 pp., illus. $11.50*

One of the more acute problems relating to the field of building concerns the inter-relationship of architecture and technology. Especially critical is the effect that prefabrication and the use of standardized components may have on the highly individual expression to which architecture gives recognition. Some see prefabrication as spelling out the end of architecture as we know it. We are confronted by the possibility of buildings which will be nothing but erector-set components joined together so as to yield a structure of the desired size. Others see in technology and prefabrication the salvation of architecture and of mankind. It is looked upon as the means by which today's mass market can be satisfied both quantitatively and artistically. The crux of the matter, as the author points out, is not whether one ought to accept

(Continued on page 214)



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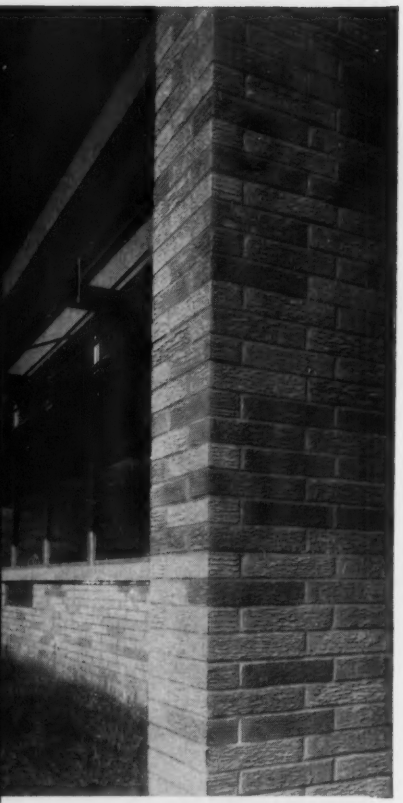
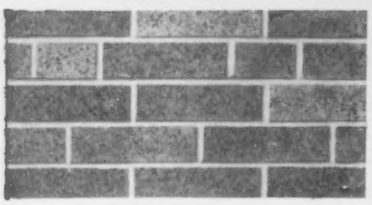


Above, Medusa StoneseT as a beautiful white mortar joint for natural stone. *Below*, StoneseT enhances the beauty of face brick.



Above, Medusa BrikseT gives a uniformly, soft, gray mortar joint throughout the wall. *Below*, section showing BrikseT with natural stone.

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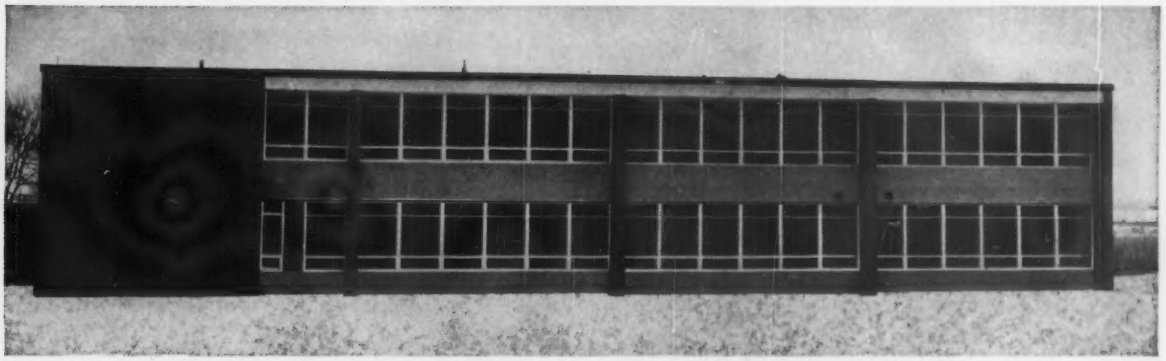
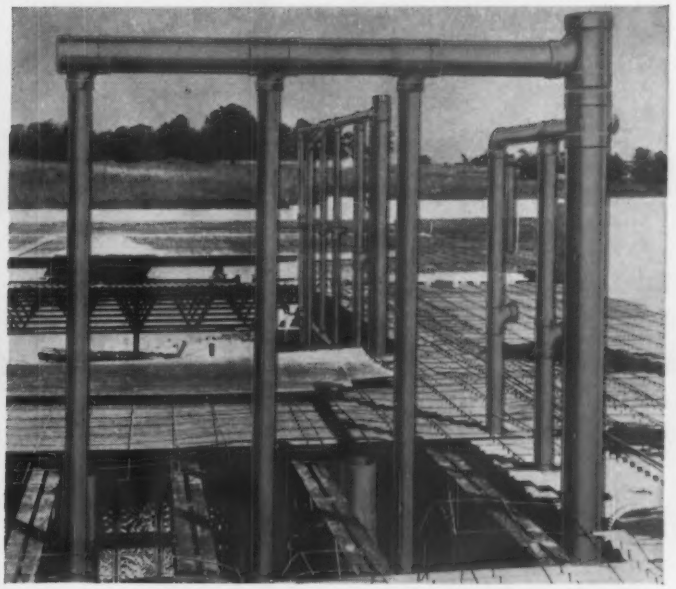


GOWER SCHOOL ADDITION, Hinsdale, Illinois. *Architect:* Wight & Schlaebitz, Downers Grove, Illinois.
Plumbing and heating contractor: Jerry & Phil's Plumbing & Heating, Inc., Brookfield, Illinois.

SUPERIOR ALL-COPPER PLUMBING IN THIS SCHOOL AT LOWER COST TO TAXPAYERS

COPPER SANITARY DRAINAGE LINES roughed-in among structural members at Gower School. This space-saving installation would have been impracticable with heavy, bulky pipe requiring threaded or caulked joints.



COPPER SANITARY DRAINAGE LINES for second floor lavatories at the Gower School. Light weight of copper tube and ease of making solder joints save many dollars on multiple installations like this. Compact assemblies eliminate wide plumbing walls, give greater usable floor area.

Phil Bergeron and Jerry Wehrmeister, plumbing contractors near Chicago, have found that the installation economies with copper tube and solder-joint fittings enable them to offer all-copper plumbing—water supply *and* sanitary drainage—at a cost lower than competitive bids based on installing ferrous piping. Recent jobs awarded to them as low bidder include the Gower School, the LaGrange Township Junior High School, a church, health center, two restaurants and a store. Anaconda was used for all these jobs. Phil Bergeron says, "We specify Anaconda Copper Tube and Fittings because their consistent fine quality and close tolerances makes our work easier and keeps the job costs within our estimates."

Contractors, builders, and architects the country over are finding that they can provide long-lasting, low-maintenance all-copper plumbing at a cost competitive with ferrous piping. For information on Anaconda Copper Tube and Fittings, write for a copy of Publication C-33. Address: The American Brass Company, Waterbury 20, Conn. In Canada: Anaconda American Brass Ltd., New Toronto, Ont.

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Fort Sanders Elementary School, Knoxville, Tennessee. Architect: Painter, Weeks & McCarty. General Contractor: Emory & Richards Construction Company

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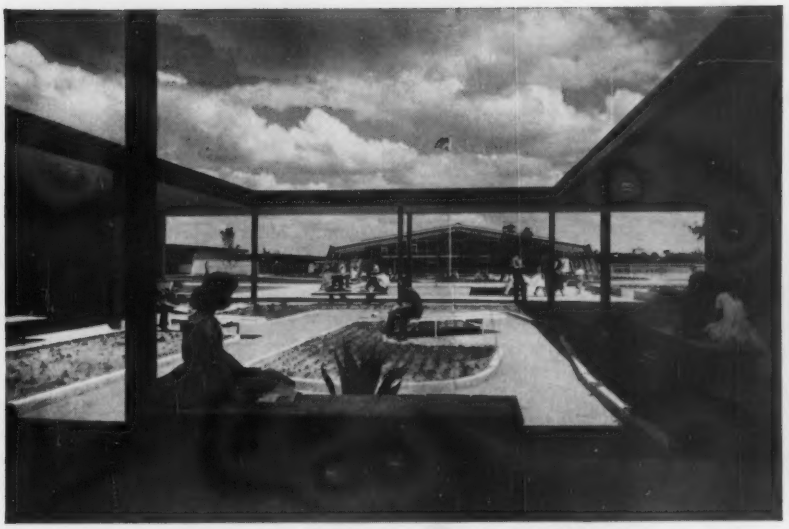


San Angelo Central High School, San Angelo, Texas Ulric Meisel photo

primary and secondary pumping with B&G® PUMPS keeps horsepower down

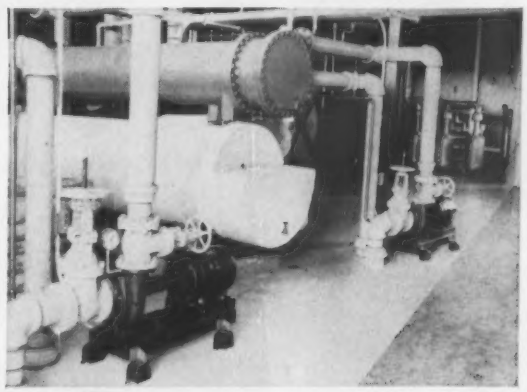
Architects: Caudill, Rowlett & Scott—Houston, Texas, Oklahoma City, Okla., Corning, N. Y. and Stamford, Conn.
Associate Architect: Max D. Lovett—San Angelo, Texas
Engineer: J. W. Hall—Bryan, Texas
Mechanical Contractor: R. M. Wells—Quanah, Texas

The twelve buildings of this campus-type high school are heated and cooled with water. The pumping equipment consists of six B&G Universals, twelve Series 1510-B pumps and eight Boosters.

These pumps circulate single and dual coil units for heating and cooling and also the service water lines. Pump sizes range from 1/6 HP Boosters to 20 HP Universals.

To keep pumping horsepower at a minimum, a B&G primary and secondary pumping arrangement is employed, with the piping divided into three primary circuits. Each primary pump is sized to circulate the maximum demand for water through a single loop. The pump, therefore, need only be large enough to overcome the friction head in the primary piping circuit.

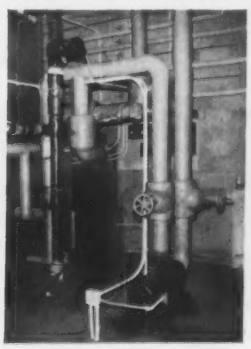
Secondary pumps in each building, and for each major zone in each building, handle water quantities out of these main circuits and overcome the balance of the head in the system.



Two B&G Pumps for circulating chilled water

B&G Universal Pump

B&G Booster



B&G Universal Pump for circulating heated water through primary circuit

B&G Booster circulating one of the secondary circuits

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reviews

(Continued from page 208)

or reject technology in the field of architecture. Mass production, prefabrication, automation are all here and they cannot be ignored. What is needed is to fully exploit them and to make technology the ". . . instrument of creative endeavours . . .".

Konrad Wachsmann is particularly well fitted to deal with this problem. By education, training, and interest he has been continuously preoccupied with the reconciling of the demands of architecture and technology. As a practicing architect and partner of Walter Gropius, he has been confronted with the problems of design and esthetics and, as founder of the General Panel Corporation, he had to solve the tasks of producing and selling standardized prefabricated building elements. The reader who had hoped for an impartial resolution of the problems of architecture vs. technology, will be disappointed as Wachsmann throws his weight very much to the side of technology.

Wendepunkt im Bauen is a brilliant analysis and discussion of technological processes and the advantages to be derived from them. Wachsmann highlights the problems that will arise from their employment. He shows the need for a rethinking of our attitude toward building and for the greater need of co-ordination among the building teams. We are warned of the challenges that will have to be met when technology develops new structural and mechanical processes. Wachsmann says very little as to the problems of art, beauty, and esthetics and his interest is more with the means than with the end result. As far as the end result of what is meant by *Baukunst* (the art of building) or as to how to achieve it, the reader is left far up in the air. The author's answer is that this problem will answer itself once man is capable of fully recognizing and of fully identifying himself with his environment.

The rejection of a preoccupation with the esthetic or the outstanding in the field of architecture is also apparent in the illustrations of this book. Wachs-

(Continued on page 224)

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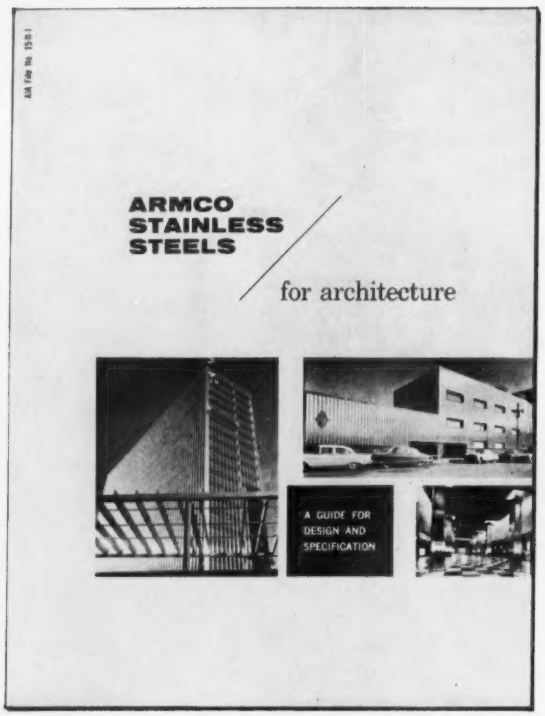

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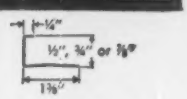

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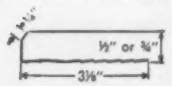

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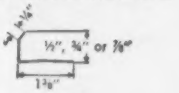

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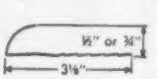

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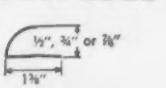

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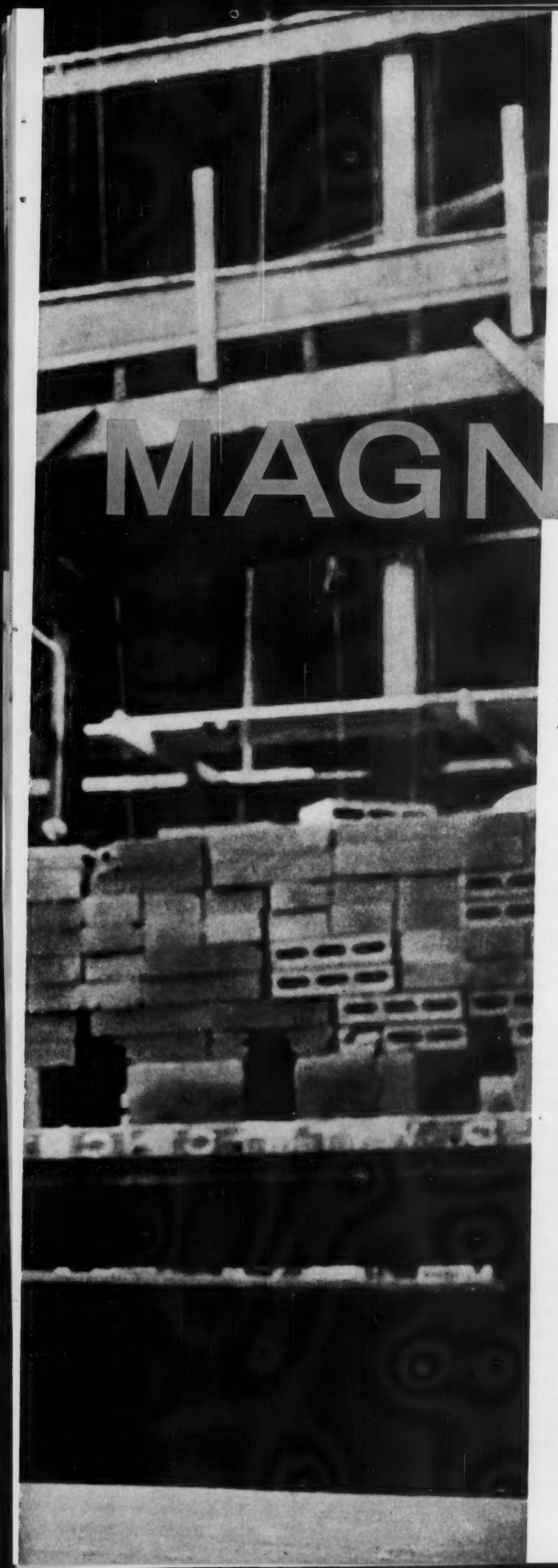

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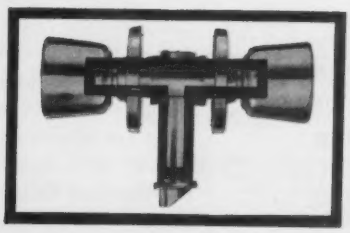

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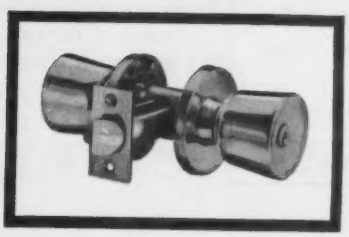

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reviews

(Continued from page 214)

mann's concern as stated by him, was to select the feasible and the typical and the field which was independent of any one individual's genius. The result is a group of pictures ranging from the Crystal Palace's structural system, to the joints of the Eiffel Tower, to contemporary lift-slab curtain-wall construction. These are often fascinating and, in such instances as those of the Brooklyn bridge, beautiful, but they can hardly be defined as architecture.

Not the least interesting aspect of this book is that it was not only written but it was also designed as to layout, print, cover, and even dust jacket by Wachsmann. The result is a work which must be rated as a truly creative effort. It is possessed of a continuity and unity of purpose which is all too lacking in most books. It is a volume which one can enjoy for its own self quite independent of one's reaction to the author's message.

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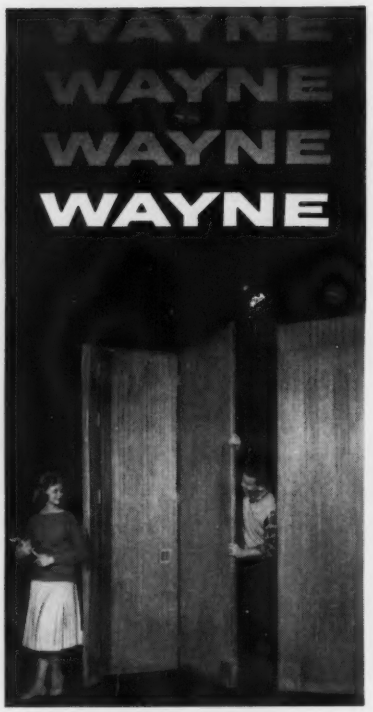
notable symposium

Planning 1959. Selected Papers from the 25th Anniversary National Planning Conference. *American Society of Planning Officials. 1313 East 60th St., Chicago 37, Ill., 1959. 189 pp., $5.00*

Celebrating a milestone is usually an occasion for reviewing past achievements with pride, and in ASPO's case there is just reason. The organization has grown vastly in scope and effect since the early days of the profession.

These selected papers, from the recent annual conference, range from the abstract (an address on democratic leadership by Dean Robert A. Nishet of the University of California, Riverside) to the concrete (a description of the cooperative approach between builders and planners on the Jefferson Valley Plan at Yorktown, N. Y.); from the general (discussions of legislation, public relations, federal and state aid, metropolitan government) to the specific (principles

(Continued on page 234)



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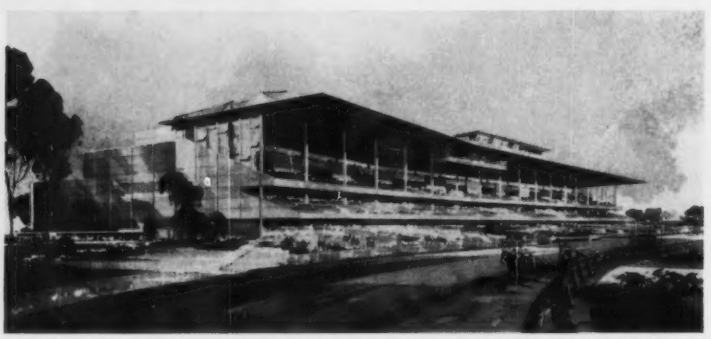

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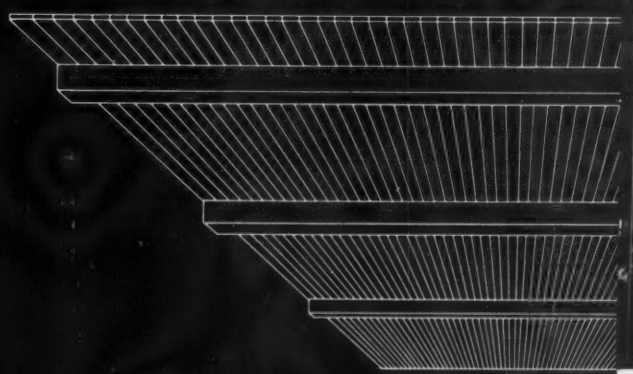

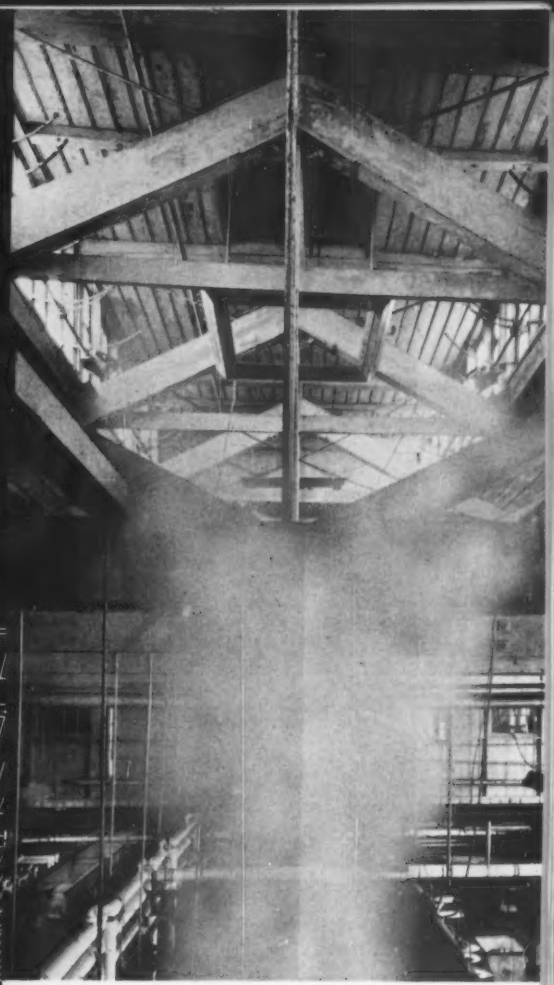

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General Contractor: G. L. Tarlton Contracting Co.
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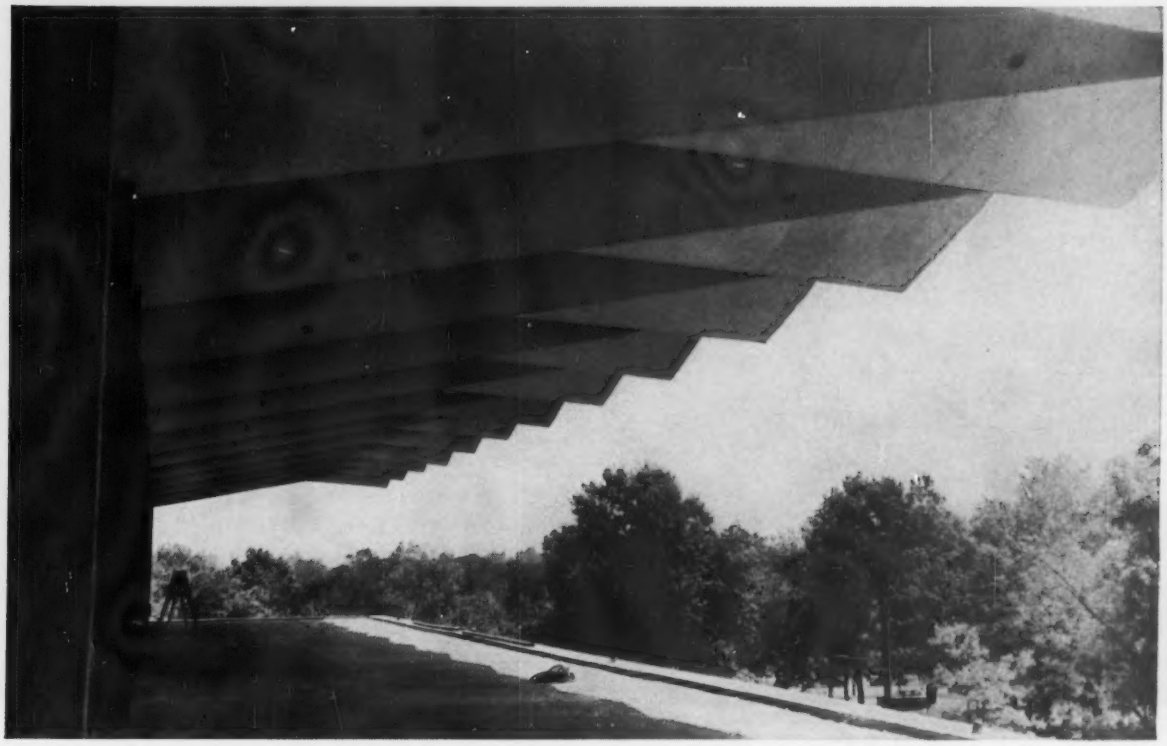
Structural Engineers: Eason, Thompson Associates



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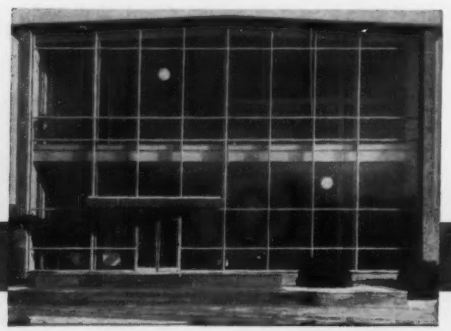


Overline Stainless Steel Entrances

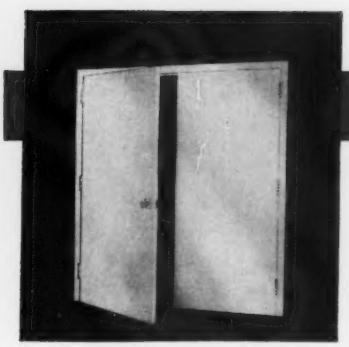
Contours for the jet age ... Craftsmanship by Overly

This architecturally dramatic Overly parabolic roof covers the recently-completed Moissant International Air Terminal in New Orleans.* A batten type "B" design, the new roof has an alodine aluminum finish with 12 gauge ribs accentuating the arch design.

Why was Overly specified to fabricate this design? There are several reasons: The Overly tradition for *craftsmanship* is inherent at every step from original pre-fabrication at the plant to erection supervision at the construction site. Over 70 years of experience in metal fabrication allow us to offer a 15-year warranty against manufacturer's defects on all Overly Goodwin batten type roofs. And Overly's creative crafting of *any* roof form assures the architect of a skilled and accurate interpretation of his design in metal.

In planning roof installations of metal, consider Overly's assistance in faithfully translating your ideas into a lasting structure. You may also be interested in other Overly metal products: The complete line of Overline hollow metal doors and frames, labelled and non-labelled, in over 90 different styles; the Overline stainless steel entrance series, crafted to complement the exterior of any building; Overly fire barriers, the only U/L labelled and fully tested fire barrier available today; Overly Tilt-A-Front construction, specifically fabricated for one or two story buildings; and church steeples by Overly, crafted in handsome modern or Gothic. For metal products that match your specifications, why not contact Overly.

**Other current Overly Goodwin batten type installations may be found at the new addition to the U.S. Senate Office Building, Washington, D.C.; the Idlewild International Airport, New York City; the University Field House, University of Illinois and the U.S. Naval Academy Gymnasium, Annapolis, Md.*



Overly "A" Label, Type 50 Doors

The Architects Craftsman

Overly

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With heating, cooling and acoustical functions all located in the ceiling, every square foot of floor space becomes usable . . . there are no extra accommodation costs such as specially designed walls to carry service lines or ducts . . . no specially built wall recesses or protrusions to house heating or cooling devices.

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Architectural Products Division
731 East Park Ave., Libertyville, Illinois

Student Center, North Carolina State College, Raleigh. The patterned floor of this dining-assembly-lecture space is Northern Hard Maple. Architect: William Henly Deitrick —John C. Knight & Associates, Raleigh.

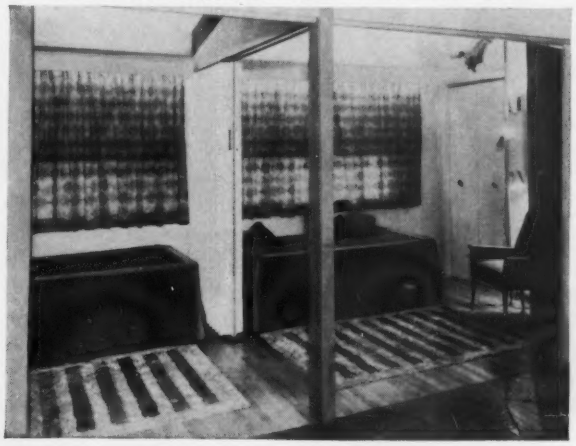
no school floor you can buy is as good a "buy" as

the finest floor that grows

Gymnasium, Maine Township High School, Des Plaines, Ill. Architect: Childs & Smith, Chicago. Photo by Hedrich-Blessing.

Northern HARD MAPLE

Smartly bright and cheerful, the Maple floor of this student double bedroom reflects its warm and homelike welcome.



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WASHINGTON STEEL CORPORATION
WOODLAND AVENUE • WASHINGTON, PENNSYLVANIA

reviews

(Continued from page 224)

involved in planning schools, resorts, airports, atomic facilities, and superhighways).

A three-part evaluation of planning—past, present, and future—given by Walter Blucher, Dennis O'Harrow, and Martin Myerson, is particularly vital and timely.

Many of the views in these papers may be familiar, but this does not make them trite. If (as we see around us) they have sometimes been so casually heeded, this demands more, not less, reiteration.

E. P.

guides to detailing

Industrial Building Details. *Duane F. Roycraft. F. W. Dodge Corp., 119 W. 40 St., New York 18, N.Y., 1959. 352 pp. $12.75*

With more and more attention being focused on the architectural aspects of industrial buildings, this collection of industrial architectural details is indeed timely. The details have been taken from the actual working drawings of projects on which the author has worked. They are presented as guides, rather than standards, to the architect or draftsman, and should be further developed or refined as the requirements of the particular building demand.

The range of subjects covered is quite extensive. The industrial building is detailed from the ground floor up to the roof—with a few side trips to plant yard areas. Details are cataloged in sections, each covering a specific item. There are sections on walls and windows, louvers, roofs, monitors, ventilators, floors, expansion joints, flashings, etc. Also included are details on such specialized items as sand storage, railroad bumpers, and time clock alleys. Each individual section tries to give a comprehensive view of modern materials and methods of construction for the particular subject illustrated; for example, the section on walls and windows covers such various types as sash walls,

(Continued on page 242)

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Smooth, uninterrupted lines — free of bolts, hinges and all visible hardware.

Interlocking door frame provides positive light seal.

Framed in the ceiling by a narrow metal band.

Maximum illuminated areas, softly diffused illumination.

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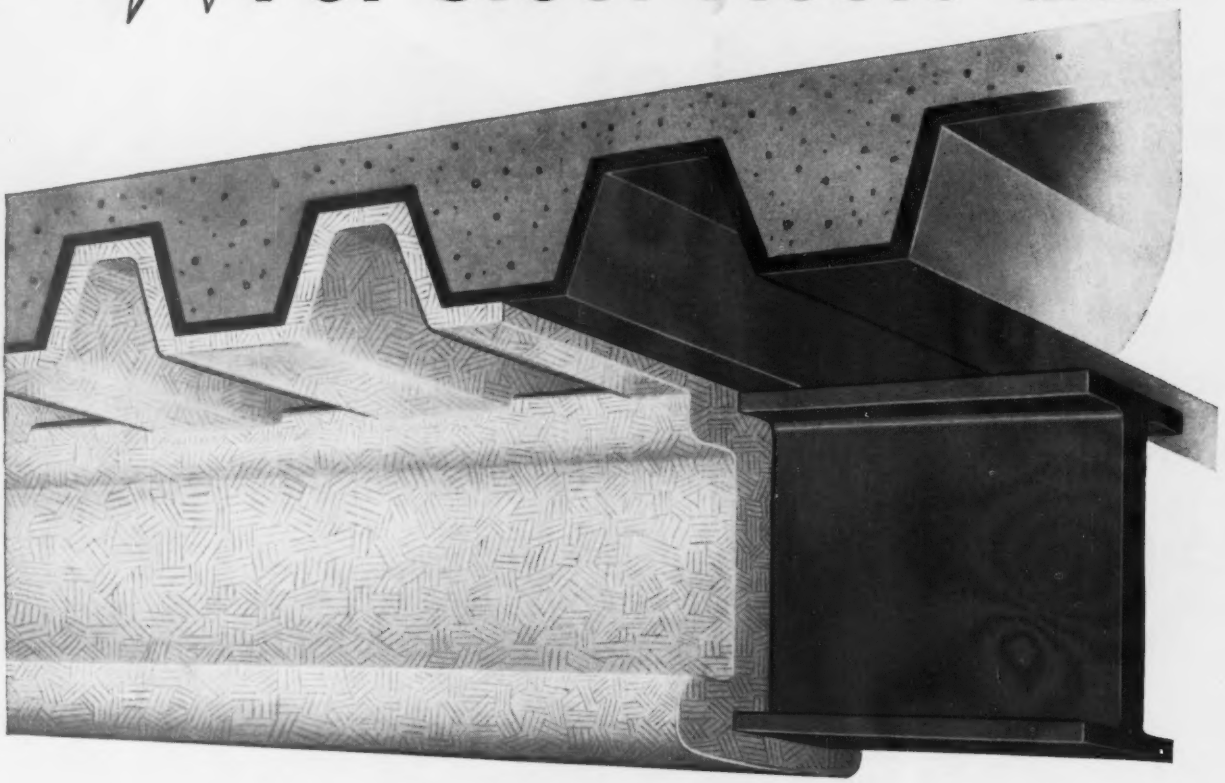

MONO-KOTE Adds these 8 Benefits to Fireproofing

1 FAST APPLICATION—Only one coat required. Saves time in applying, cuts scaffolding time and cost. Permits other trades to follow up faster.

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3 SAVES ON STORY HEIGHT—Application direct to steel fireproofing saves up to 7 inches per story in height, thus saving on other construction materials.

4 NO NEED TO "WRAP" BEAMS—Mono-Kote applies directly to beams. No need to cage beams with lath.

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Supporting Beams!

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New Time-Saving, Cost-Saving Treatment Applied Direct to Steel
No Need to "Wrap" Beams...Strong Bond...U.L. Fire-Tested

Faster fireproofing is now made possible with Mono-Kote, the interesting new concept that saves valuable time, space, money; that takes the place of several materials.

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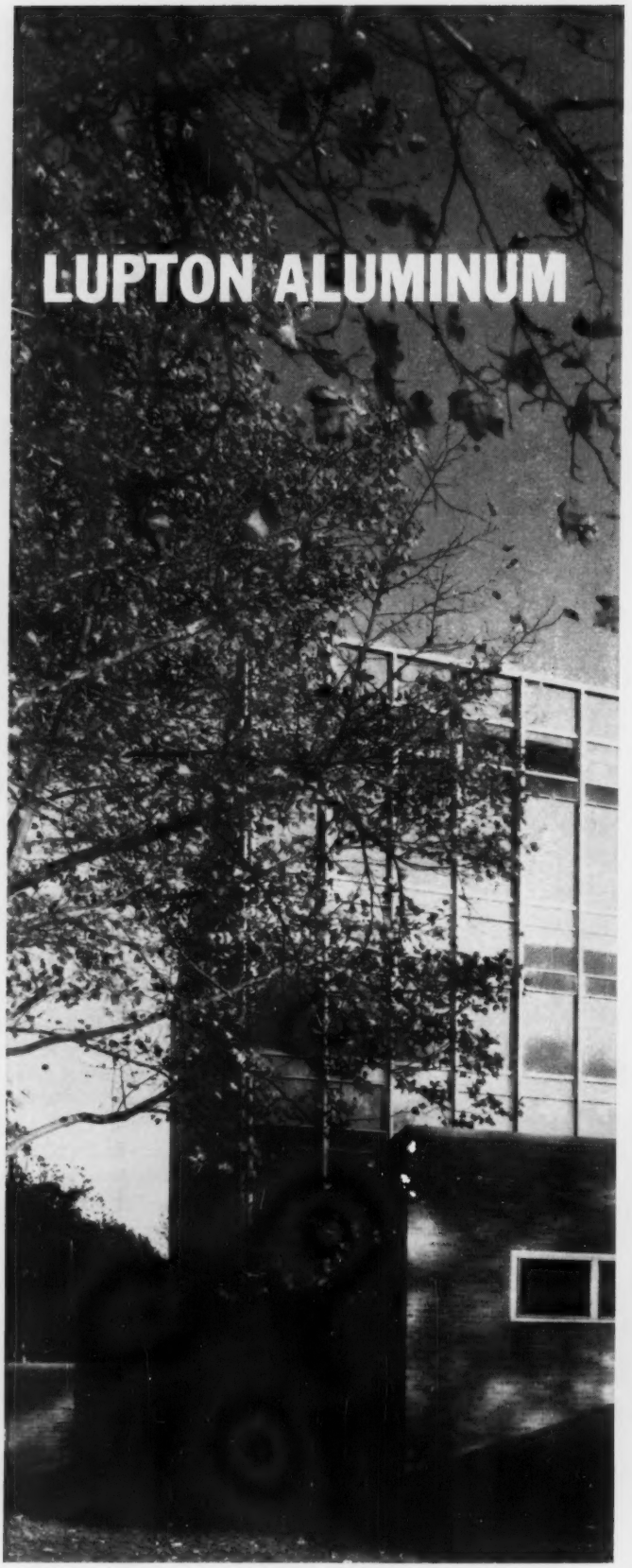
The next time you're in Philadelphia take a good look at the

Einstein Medical Center ... another installation with



The Einstein Medical Center (Northern Division),

Take a good look at the clean, simple lines of this striking monument to modern-day medicine. Notice how beautifully everything fits—the synthesis of approximately 11,400 sq. ft. of LUPTON Type "H" curtain-wall units, 549 LUPTON "Master" projected aluminum windows, and 732 LUPTON double-hung aluminum windows with the overall architectural concept of the building.

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See SWEET'S (Sections 3 and 17) for the Michael Flynn Aluminum Curtain Wall and Window catalogs, and write for further specific information. Inquire about LUPTON Comfort-Conditioning*—the new curtain-wall system that cools, heats, and ventilates. A call to the nearest LUPTON representative (see the Yellow Pages under "Windows—Metal") will bring fast action without obligation.

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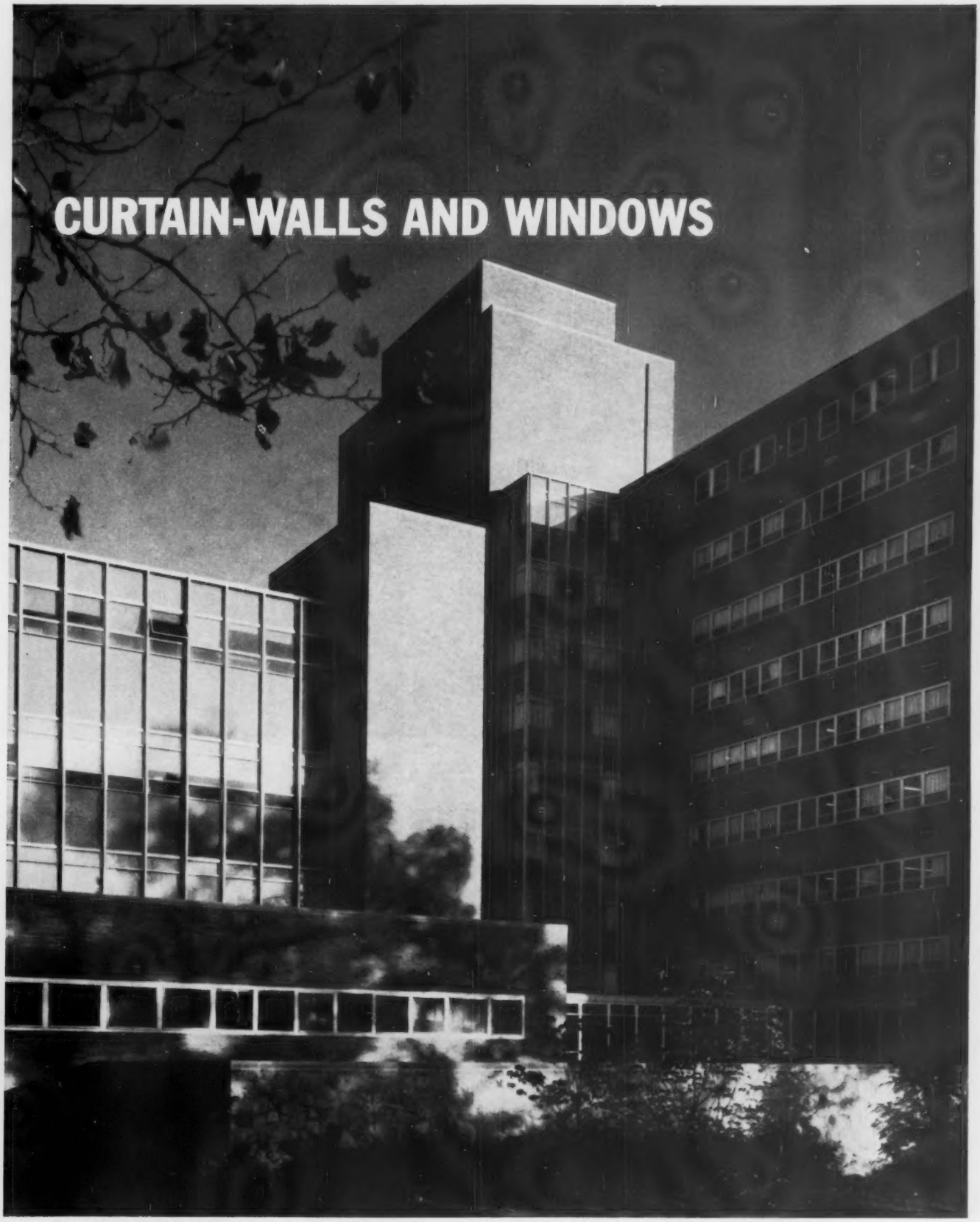
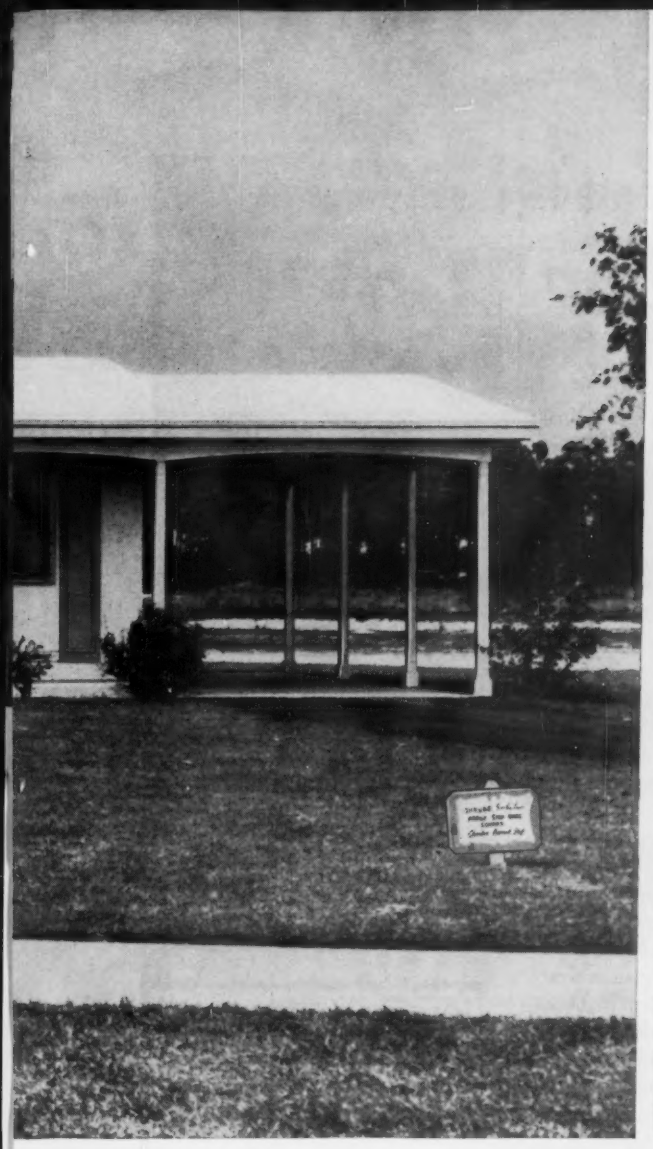


Broad Street and Tabor Road, Philadelphia, Pa. Architect: Abraham Levy, Philadelphia. Contractor: James McGraw Co., Philadelphia.

A model home in the Porter-Wagor-Russell, Inc. building project, Palmetto Country Club Estates, located near Miami, Florida. Inside plaster corners are reinforced with Keycorner lath for higher crack resistance.

"Our best selling homes are lath and plaster

Mr. Wagor, in front of one of his firm's model homes, talks over the advantages of Keycorner reinforcing lath with William Duncan, owner of the Duncan Plastering Company, Coral Gables, Florida, (right) and E. C. Faircloth, Keystone Steel & Wire Company building specialist, (center).



reinforced with KEYCORNER LATH"

... Porter-Wagor-Russell, Inc., leading Florida home-builders

"Reinforced-lath and plaster interiors are a big sales feature in our homes," reports Mr. F. B. Wagor, partner in the Porter-Wagor-Russell, Inc., builders of the large Palmetto Country Club Estates near Miami. "Best of all, it actually costs less to reinforce inside corners with Keycorner lath. You add value because of the high crack resistance and lower maintenance. Prospects are delighted with the lasting beauty of plaster. The hidden value of Keycorner reinforcement strengthens each sale."

Wherever Keycorner lath is used, it gives stronger corner reinforcement at less cost. Tests show that crack resistance of plaster corners is almost doubled as compared to other corner reinforcement.*

The pre-shaped, 4-foot lengths of Keycorner fit into corners quickly and neatly. Keycorner can be nailed or stapled. Plaster flows in and around the open mesh design of Keycorner to assure a complete bond. Keycorner lath, packed 1,000 feet to a carton, is galvanized.

KEYSTONE STEEL & WIRE COMPANY
Peoria 7, Illinois, Makers of Keycorner • Keymesh® • Keystrip • Keywall • Welded Wire Fabric • Nails

**Please send me additional information and test reports on Keycorner reinforcing lath.*

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*Company*_____

*Address*_____

City *State*

(Continued from page 234)

curtain walls, masonry walls, glass block walls, and girt-framed walls. Curtain walls include stainless steel, porcelain enamel, and precast concrete, while girt-framed walls include aluminum siding, protected metal, and gunite. Although details of corrugated asbestos-cement panels are not included in this section, this material is shown in another section.

As for the details themselves, they are clear, well drawn, and are shown at the normal scale used in working drawings, although this seems to be more of a liability than an asset. Some details require a number of sections for the complete picture to take shape, and due to the large scale, these may have to carry over on to three or four pages. This proves difficult to follow and detracts somewhat from the reference value of the book. No attempt has been made to cross-index these overlapping details. It is therefore necessary to search for the accompanying plans or sections. There is also the feeling of overcrowding in some of the larger details. A full 20'-bay plan section at 1½ in. = 1 ft scale is a little more than this page size can comfortably accomodate.

The presentation of some details could also be improved. Window details are shown as part of wall details, rather than individually. It might have been better to show a number of head, jamb, and sill sections on one page to allow a comparison and make for easier reference. The author uses this system in the sections on floors and doors and it seems to be quite effective.

There are many special detail items such as vertical pivoted sash, curtain walls, special doors, etc., where no credit has been given to the manufacturer. It would seem pointless for any draftsman to refer to the detail of a particular door or sash when he doesn't know the manufacturer.

There is also, to some extent, a display of pedantry. Preceding each section is a short commentary on the particular subject. These blurbs often give the impression of being cram courses in plant layout, economics, specification writing, industrial engineering, personnel management, or anything else that might remotely influence the selection of a specific material or design feature. Even in the selection of details there seems to be a tendency toward "filling up pages." The section on "Structural Details" contains such things as steel shop details and a floor plan showing the checkerboard pattern of pouring a concrete slab on grade. These, generally, are of little use to the draftsman insofar as architectural detailing is concerned, but the floor plan could have been given a *raison d'etre*, had it been accompanied by different types of floor joint details. Other details seem to be more mechanical in character. These include hose bib, hydrant, and liquid waste strainer details, which are portrayed as being incidental to windows, walls, and floors respectively.

The value of this work to the draftsman varies with the individual's background and experience. There are good examples of methods of portraying actual working drawing details, and the copious notes required for the draftsman to clearly convey his message to the man in the field. It is useful for obtaining basic ideas, which must be expanded by the draftsman himself. But it cannot be considered as a general reference for industrial building details. This would require a much more voluminous work than is now being presented. A general reference for this field would not only include the details themselves, but, also, the methods of adaptation and variation of these details, the limitation of these variations (maxima and minima), and data on such subjects as railroads, trucks, roads, sanitary facilities, etc., which have become an inseparable part of today's modern industrial building.

GEORGE ANDREWS
Lockwood Greene Engineers, Inc.
New York, N. Y.

fiction: good design

The Others. *Ann Aikman. Simon & Schuster. 630 Fifth Ave., New York 20, N.Y., 1960. 185 pp. $3.50*

Novels about architects are scarce, and in that slender category are very few that measure up both artistically as fiction and realistically in regard to the

(Continued on page 246)

More efficiency automatically...

STANLEY MAGIC-DOOR CONTROLS

Attendants need not leave their patients to operate doors manually. In hospitals, the degree of efficiency attained in moving patients can be *vital*. At doorways to delivery and operating suites – or at emergency entrances – Stanley Magic-Door controls assure prompt, safe passage of stretchered patients by opening and closing doors automatically.

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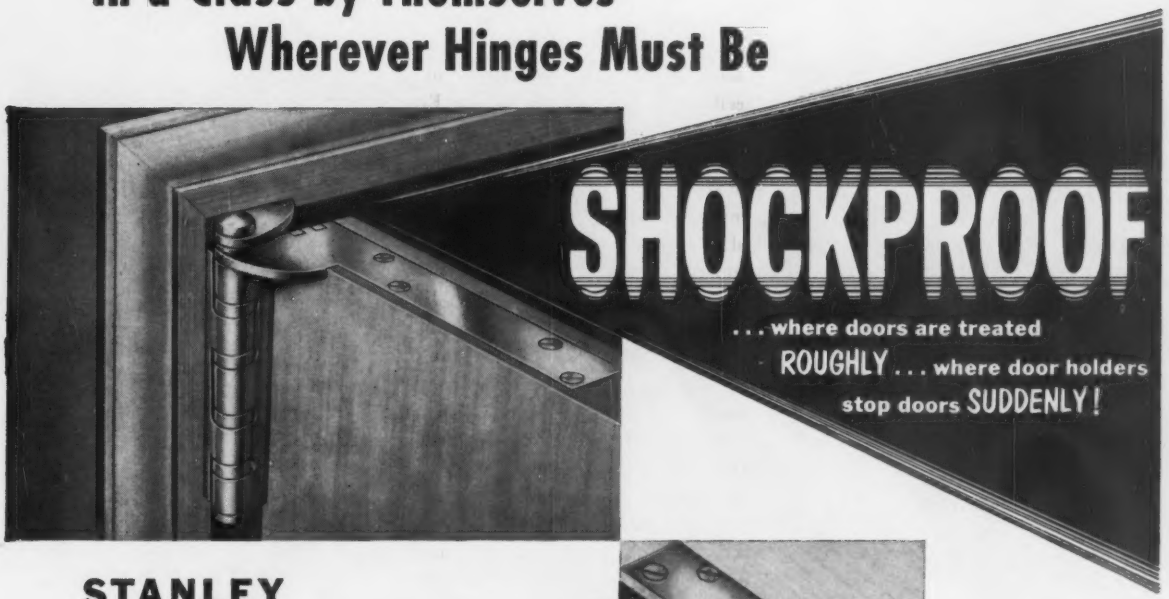
In a Class by Themselves Wherever Hinges Must Be



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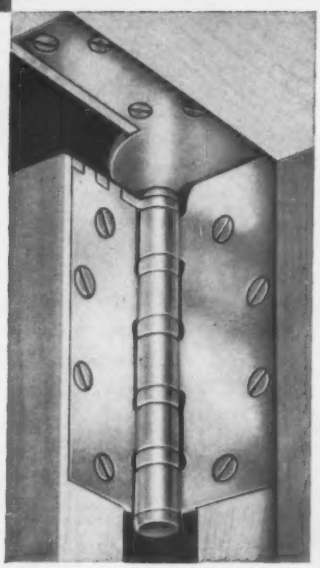
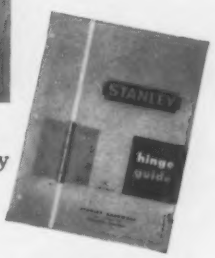
This hinge takes rough treatment better, because . . .

- **A PIVOT AND A BUTT HINGE ARE COMBINED IN ONE COMPACT, INTERLOCKED UNIT**
- **PIVOT AND BUTT HINGE SHARE SAME PIN TO ASSURE PERFECT ALIGNMENT**
- **INTERLOCKED CORNERS PREVENT SIDEWISE MOTION OF EITHER PIVOT OR BUTT LEAVES**
- **SCREW HOLES ARE LOCATED TO BOTH IMPROVE FASTENING AND PREVENT SPLITTING OF DOOR PARTS**

*PATENT PENDING



The hinge is placed at the extreme top of the door so the plates give maximum reinforcement to both the door top and the jamb.



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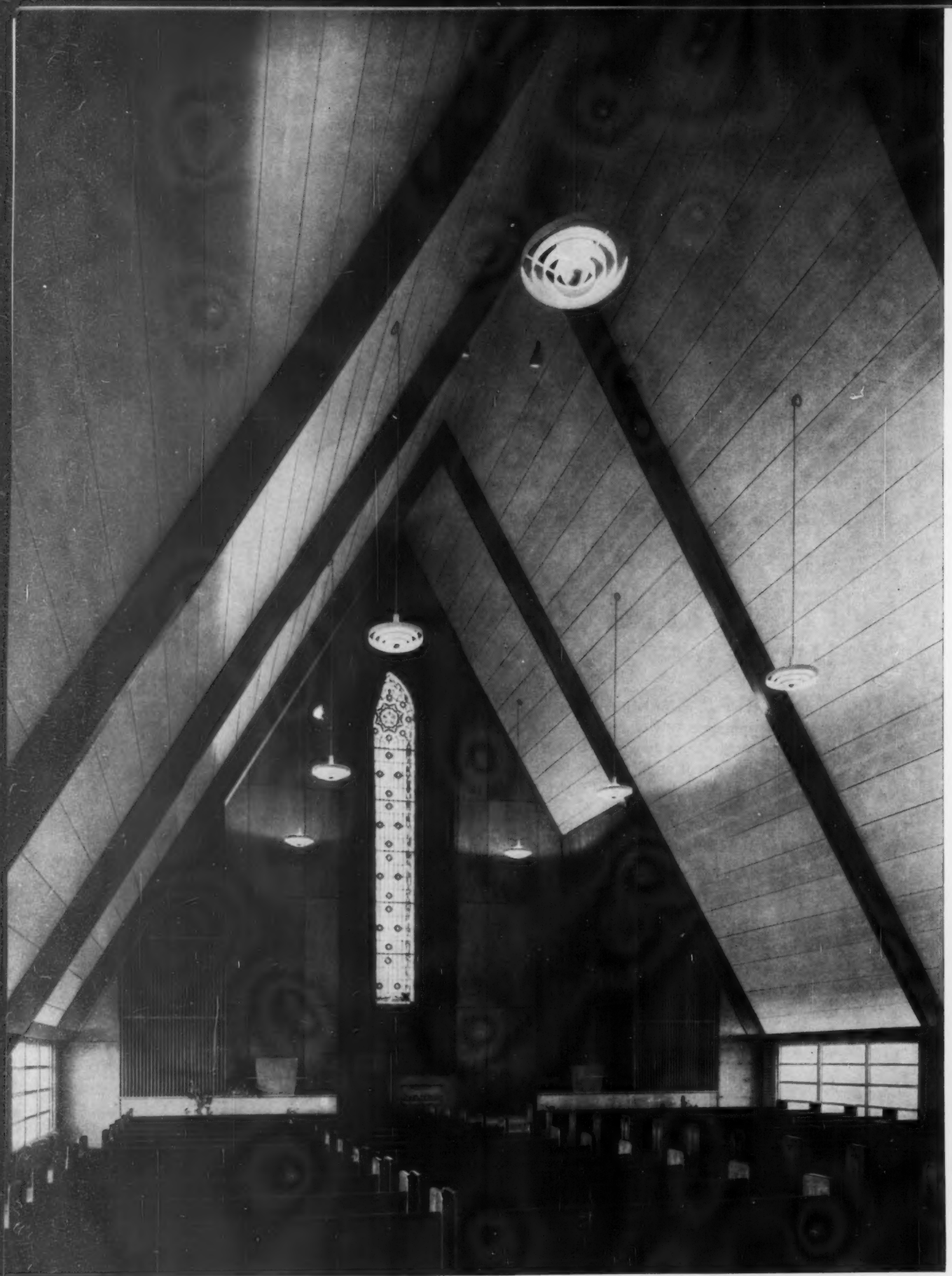

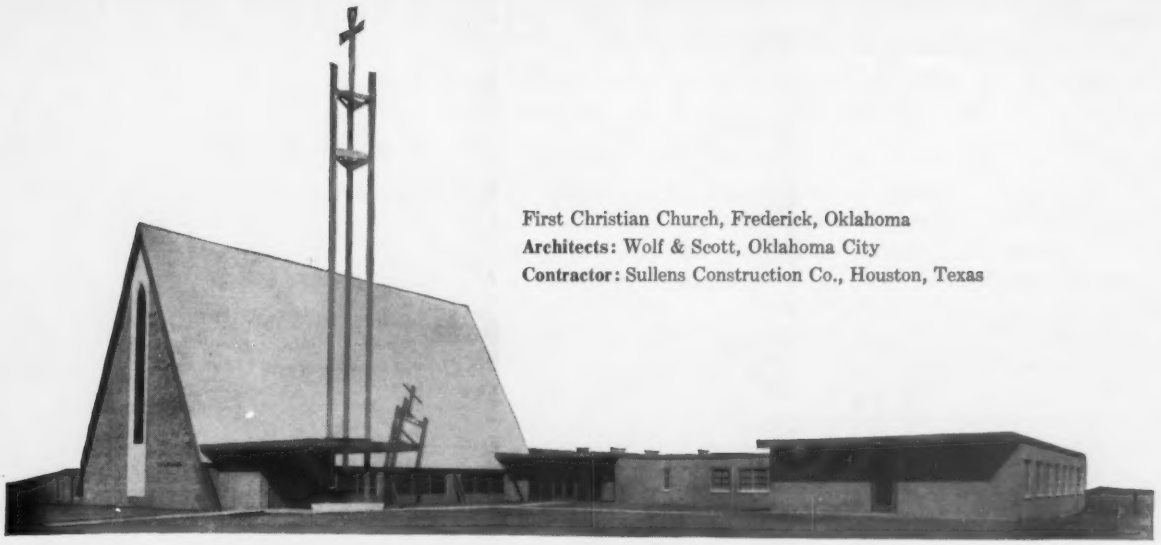

First Christian Church, Frederick, Oklahoma
Architects: Wolf & Scott, Oklahoma City
Contractor: Sullens Construction Co., Houston, Texas

CEILING DOES DOUBLE-DUTY TO STRETCH BUILDING DOLLARS

it's a structural roof . . . it's an acoustical ceiling!

Need aesthetic beauty and muted devotional atmosphere be sacrificed to a dollar sign? Must structural and enduring qualities be compromised for economical construction?

Not when you use Fenestra* Acoustical "D" Building Panels to combine structural roof and finished interior ceiling in *one* compact, easy-to-handle package. They replace *five* different materials . . . are erected in *one* operation, by *one* trade.

Under normal roof loads, these lightweight, high-strength, 24" wide steel panels span up to 31'. *Inside the panels*, just above the perforations, is a pre-formed, arched, sound-absorbing batt† which effects noise reduction coefficients up to 80%. The ceiling can be washed or painted without affecting acoustical qualities.

Get complete details. Write for FREE Fenestra Building Panel Catalog, or call your Fenestra representative. Fenestra Inc., Department PA-2, 3409 Griffin Street, Detroit 11, Michigan.

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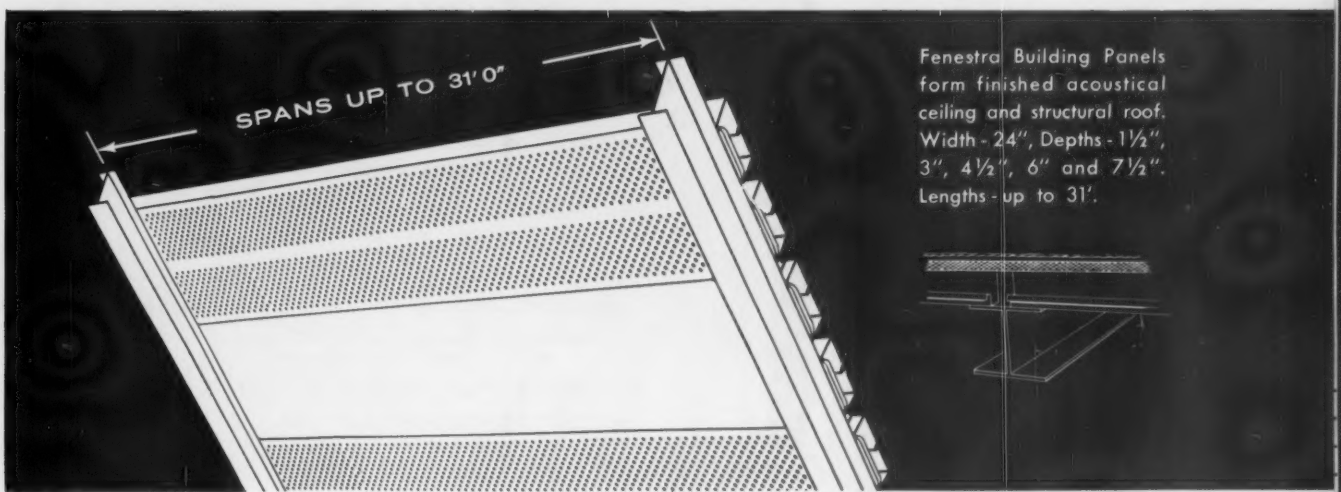


Fenestra Building Panels form finished acoustical ceiling and structural roof. Width - 24", Depths - 1½", 3", 4½", 6" and 7½". Lengths - up to 31'.

reviews

(Continued from page 242)

profession. Ann Aikman is qualified for accuracy (her husband is Walter McQuade, writer and architect) and has rehearsed for *The Others*, her first novel, as a short-story writer.

The point of the story is inherent in the title: two families, diametrically opposite, are forced into each "other's" acquaintance for one summer on Long Island. The story of their clash, and the effect on each individual, is summed up on the last page. "The summer was over and they did not plan to have anything to do with it again. They were not aware that the summer had silently detached itself from the stream of time and taken up residence, once and for all, inside themselves."

The Alexanders (the architect's family) and the Mooneys (the motel-builder's family) all tangle, two by two. The story involves all of them, and the contrast between the two men is only one facet of the many-sided prism. It is there, and it is real, but unfortunately Miss Aikman is much more at home with the wives' and the adolescents' viewpoints than she is with those of the men. Yet the two men are distinct characters, and probably the most likeable people in the story. The reader wishes he could see more of them. Only a few times is Alexander allowed to sound off on his profession and his own inner emotions. It is titillating to glimpse a man who is somewhat of a genius and quite a bit of a human being . . . and have to leave him so frequently to enter the minds of wives and 'teen-agers. Mrs. Alexander, as the book jacket states, is a strong-willed, devoted wife and mother. She is also a rather unpleasant person, as is Mrs. Mooney. Both are disagreeable people, well-delineated. The adolescents are excellently drawn. But, again, their inner ticking seems tinny compared to what might be going on inside their fathers' minds.

The writing style in *The Others* is a contrast to that of two other well known novels about architects: Edwin Gilbert's rich, loose *Native Stone* and Ayn Rand's flamboyant gargantua, *The Fountainhead*. This is a tidy, well-organized, almost epigrammatic book. Words are not wasted. Miss Aikman has constructed well, as if from a blueprint. But somehow one comes away from the book with a greater understanding of the families and friends on the fringe of the architectural profession, than of the architects and builders themselves.

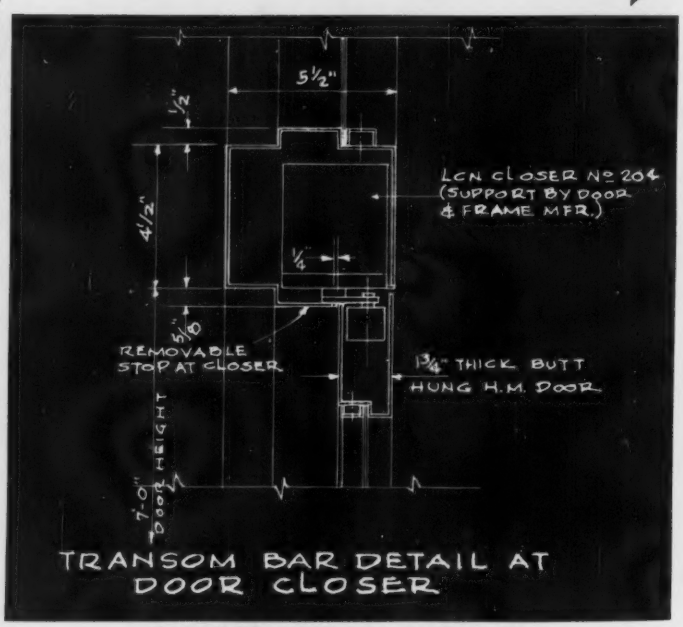
J.W.F.

BOOKS RECEIVED

Planning for Urban Transportation. Proceedings of Second Annual Spring Conference of the Organization of Cornell Planners, College of Architecture, Cornell University, Ithaca, N.Y., 1959. 85 pp. $2.

An Introduction to the Dynamics of Framed Structures. Grover L. Rogers. John Wiley & Sons, Inc., 440 Fourth Ave., New York 16, N.Y., 1959. 355 pp. $10.25

(Continued on page 252)



CONSTRUCTION DETAILS

for LCN Overhead Concealed Door Closer Shown on Opposite Page

The LCN Series 200 Closer's Main Points:

1. Efficient, full rack-and-pinion, two-speed control of the door
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Canada: Lift Lock Hardware Industries, Ltd., Peterborough, Ontario

Modern Door Control by *LCN*. Closers Concealed in Head Frame

NEW OFFICE BUILDING, SCHIELD BANTAM COMPANY, WAVERLY, IOWA

LCN CLOSERS, INC., PRINCETON, ILLINOIS

Construction Details on Opposite Page

Perkins & Will, *Architects-Engineers*

TALL...BRIGHT AND HANDSOME

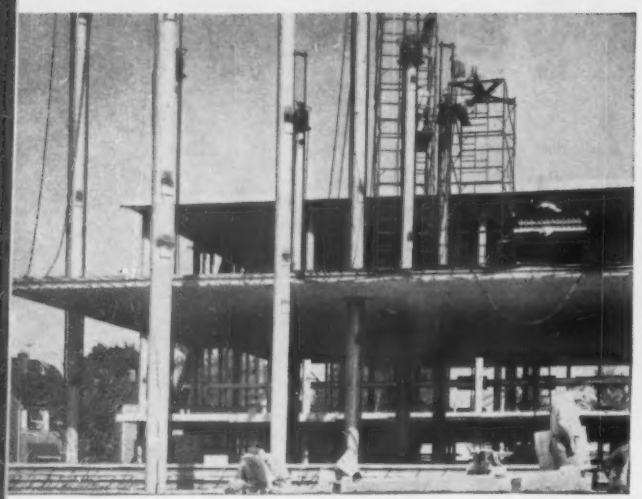
Chicago's smart, new Executive House Hotel boasts all-stainless exterior

There will never be anything dark about this new Chicago hotel. Architects chose stainless steel for the entire exterior. Supplied in part by Republic Steel, the stainless—Type 302—was fabricated by Haskelite Manufacturing Corporation, Grand Rapids, Michigan.

Stainless is the bright solution to long-range economy requirements. It assures proven strength and durability . . . greater resistance to corrosion, scuffs, scratches, and dents. Hard, lustrous finish will not bleed or discolor with age. Stainless requires no painting, washes bright-as-new in the rain or with occasional soap and water cleanings.

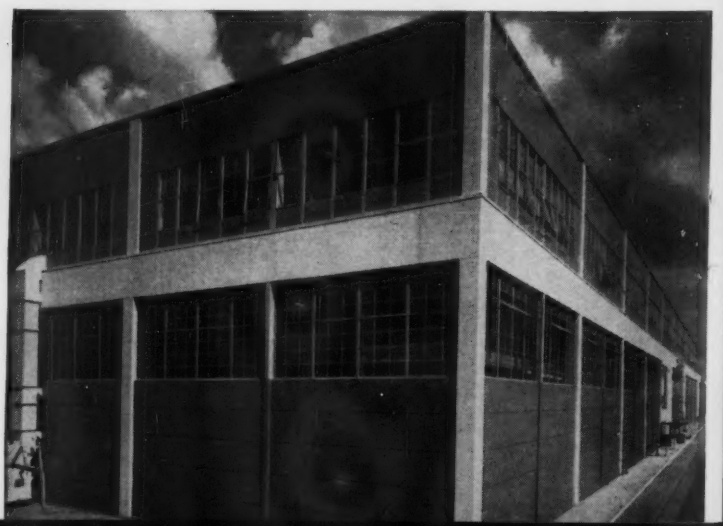
For complete information on Republic Stainless Steel for architectural applications, return the coupon. Or, check Sweet's Architectural Catalog File, Section 6c/Re.

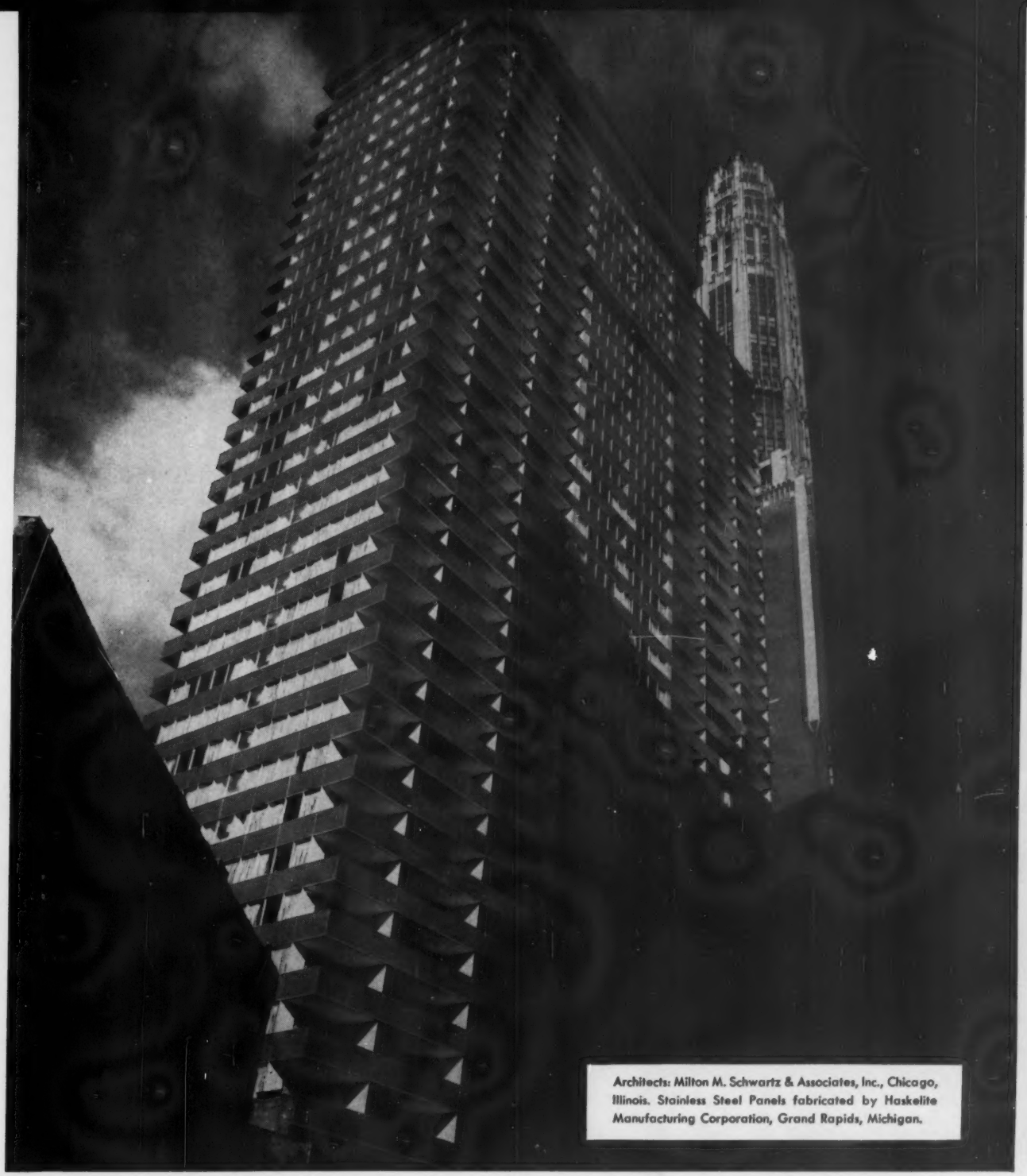
1. REPUBLIC HIGH STRENGTH BOLTS saved valuable time and labor in the construction of the new Bobbie Brooks, Inc., warehouse in Cleveland, Ohio. Two-man crews installed the bolts quickly and easily on the 80-foot, double-pitched main trusses. Design and construction by The Austin Company, Cleveland, Ohio. Erection schedules are easily met or even shortened with Republic High Strength Bolts. Check coupon for illustrated folder.



2. 10¾" O.D. REPUBLIC STEEL PIPE was used in erecting the new Tremco Building in Cleveland, Ohio. Slabs were poured on the ground then hoisted up pipe by means of hydraulic screw jacks. Time and money were saved by the elimination of scaffolding and elevators. Slabs were raised at the rate of three feet per hour. The Austin Company, Engineers and Builders.

3. ALL THE ADVANTAGES of modern curtain wall construction *plus* the exclusive feature of insulated panels, integrated with heavy-intermediate steel windows, are yours with Truscon VISION-VENT® Window Walls. Pictured is the Boeing Airplane Company installation, Building #201, Seattle, Washington. With VISION-VENT, you select practically any type of window —steel or aluminum—with either stainless steel or porcelainized panels in a wide choice of colors. Send for literature.





Architects: Milton M. Schwartz & Associates, Inc., Chicago, Illinois. Stainless Steel Panels fabricated by Haskelite Manufacturing Corporation, Grand Rapids, Michigan.

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For natural warmth and beauty specify Andersen WINDOWALLS . . . the complete wood window unit

The Chapel of St. James the Fisherman is at Wellfleet, Massachusetts, a once flourishing Cape Cod whaling village, rich in seafaring history. Exposed wood framing and siding suggest the structural honesty of a stout wood ship. Overhead skylight and floor level fenestration achieve a luminous atmosphere for devotion. Seventy-two wood Andersen Flexivents® form a continuous window ribbon at floor level.

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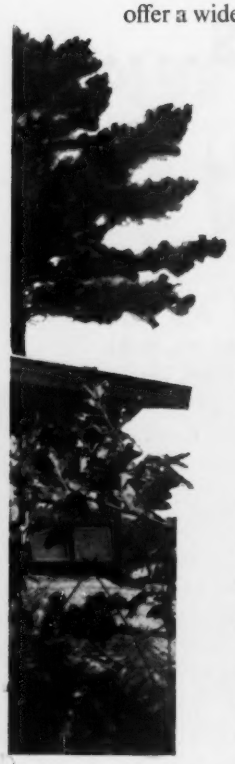


Andersen WINDOWALLS are crafted in wood, a natural insulating barrier. They are 21.5%* more effective than aluminum sash in blocking outside heat or cold. Offer savings up to 10% in total heating and air conditioning costs. WINDOWALLS are easily painted or stained to beautiful natural wood finishes.

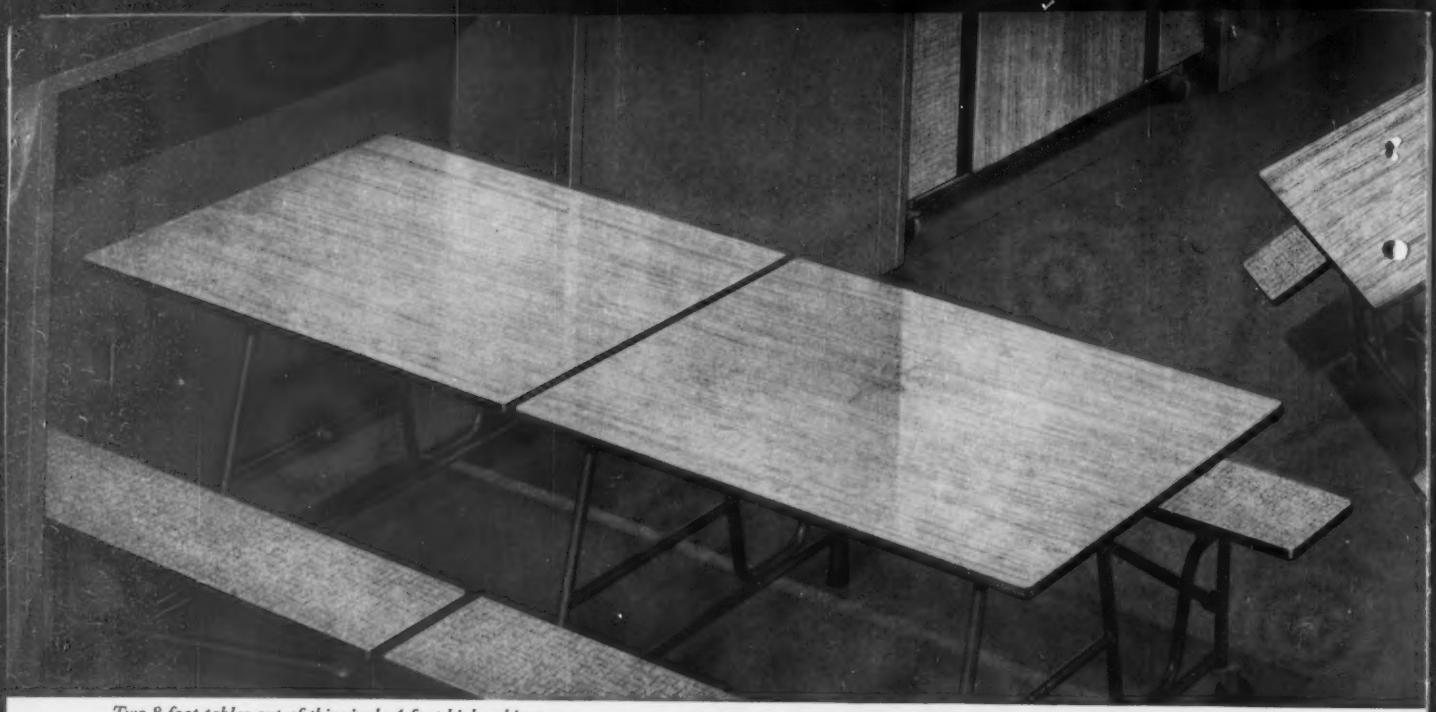
With all factors considered, Andersen WINDOWALLS often cost less than other windows you may have specified. Check your Sweet's File or write for Detail Catalog and Tracing Detail Files. Andersen Windows are sold by lumber and millwork dealers throughout the United States and Canada.

*ASHRAE GUIDE

Designed by Frank Lloyd Wright for prefabricated construction, this house makes liberal use of Andersen Flexivent Windows with fixed and operating sash. Corner WINDOWALLS in 2-story living room give feeling of immense spaciousness.

Big, big Andersen Gliding Windows flick open sideways at a finger's touch. Solution to an irregular downhill site achieves WINDOWALL effect without sacrifice of ventilation. Motel, St. Clair, Michigan. Architect: George D. Lytle.

An invitation to patio living, thanks to Andersen Patio Wall. Gliding Windows combine economically with hinged door, offer patio access and year-around comfort. Space under windows provides for heating and wiring.



Two 8 foot tables out of this single 4 foot high cabinet

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reviews

(Continued from page 246)

Town and Country Planning. Patrick Abercrombie. Third Edn., revised by D. Rigby Childs. Oxford University Press, Inc., Fair Lawn, N.J., 1959. 292 pp., illus. $1.20

Grandeur On the Appoquinimink. John A. H. Sweeney. University of Delaware Press, 1959. (Distributed by University Publishers, Inc., 59 E. 54 St., New York 22, N.Y.) 146 pp., illus. $6

Purchase Guide for Programs in Science, Mathematics, Modern Foreign Languages. Prepared by the Council of Chief State School Officers with the Assistance of Educational Facilities Laboratories, Inc., and others. Ginn & Company, 72 Fifth Ave., New York, N. Y., 1959. 336 pp. $3.95

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notices

new firms

JAMES C. ROSE, Landscape Architect, 107 E. 60 St., New York 22, N.Y.

EDWARD W. KRESS and LEONARD W. WINSTON, principals in the firm of KRESS & WINSTON, INC., Architects-Engineers, 363 Park Ave., San Jose, Calif.

new addresses

H. E. BEYSTER & ASSOCIATES, INC., Architects-Engineers, 9512 Woodward, Detroit, Mich.

GUSTAV GEGAUFF, Structural Consulting Engineer, 286 N. Broad St., Elizabeth, N.J.

name change

In order to encompass the wide scope of its products and services, the WEYERHAUSER TIMBER COMPANY announces the new name of WEYERHAUSER COMPANY.

unite facilities

MOTOROLA, INC., and its subsidiary, DAHLBERG, INC., announce that they have joined facilities to be of greater service in the field of hospital communications.

notices

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THOMAS J. LANNEN, appointed manager of residential sales, succeeding WILLIAM S. ELLIS, JR., named advertising promotion manager, and RICHARD C. KASSER, made manager of design and sales engineering for the newly-created Aluminum Structural Division, at the ALCOA ALUMINUM COMPANY OF AMERICA.

W. J. BERKLEY, appointed vice-president and sales manager of the AMERICAN AIR CURTAIN CORPORATION, a subsidiary of UNIVERSAL MATCH.

JAMES W. HOSLER, appointed general sales manager of the Industrial Division of AMERICAN-STANDARD CORPORATION.

E. A. MILLER, elected president and chief executive officer, succeeding H. D. PALMER who has been named chairman of the board of FENESTRA INCORPORATED.

PHILIP SCHARF, JR., appointed promotion manager-panelboards and switchboards of the BULLDOG ELECTRIC PRODUCTS DIVISION of I-T-E CIRCUIT BREAKER COMPANY.

M. J. HIRSHSTEIN, made president, A. L. YEAGER, elected vice-president in charge of manufacturing, and LEWIS H. POLSTER, elected vice-president in charge of sales at JOSAM.

CHARLES R. ROBERTS, elected executive vice-president of the firm and subsidiaries of MACOMBER INCORPORATED.

GILBERT L. OSWALD, promoted to vice-president and general manager of the SIMPSON REDWOOD COMPANY.

ELLWOOD F. ALTMAIER, appointed manager of the newly-created tariff section, and ANGELO J. SMITH, JR., succeeding as manager of advertising and promotion in the Textile Fibers Department of E. I. DUPONT DE NEMOURS & COMPANY.

RICHARD A. ALLEN, appointed general sales manager of HOLCOMB & HOKE MANUFACTURING COMPANY, INC.

C. FRED BORDEN, appointed executive vice-president of KAISER STEEL CORPORATION.

RICHARD E. NEMMERS, appointed general sales manager of WATERLOO REGISTER COMPANY, INC.

CRAWFORD E. STEISS, named vice-president of sales for the L. J. WING MANUFACTURING COMPANY, division of AERO SUPPLY MANUFACTURING COMPANY, INC.

PETER A. MCLEOD, appointed as field sales manager of the Air Conditioning and Refrigeration Division of WORTHINGTON CORPORATION.

JAMES C. PLUNKETT, appointed as full-time advertising manager of the Fiber Glass Division of the PITTSBURGH PLATE GLASS COMPANY.

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DAN A. KIMBALL, President, AEROJET-GENERAL CORPORATION, announces that the Architect-Engineer Division of the corporation has become the AETRON DIVISION under Manager B. F. ROSE, JR.

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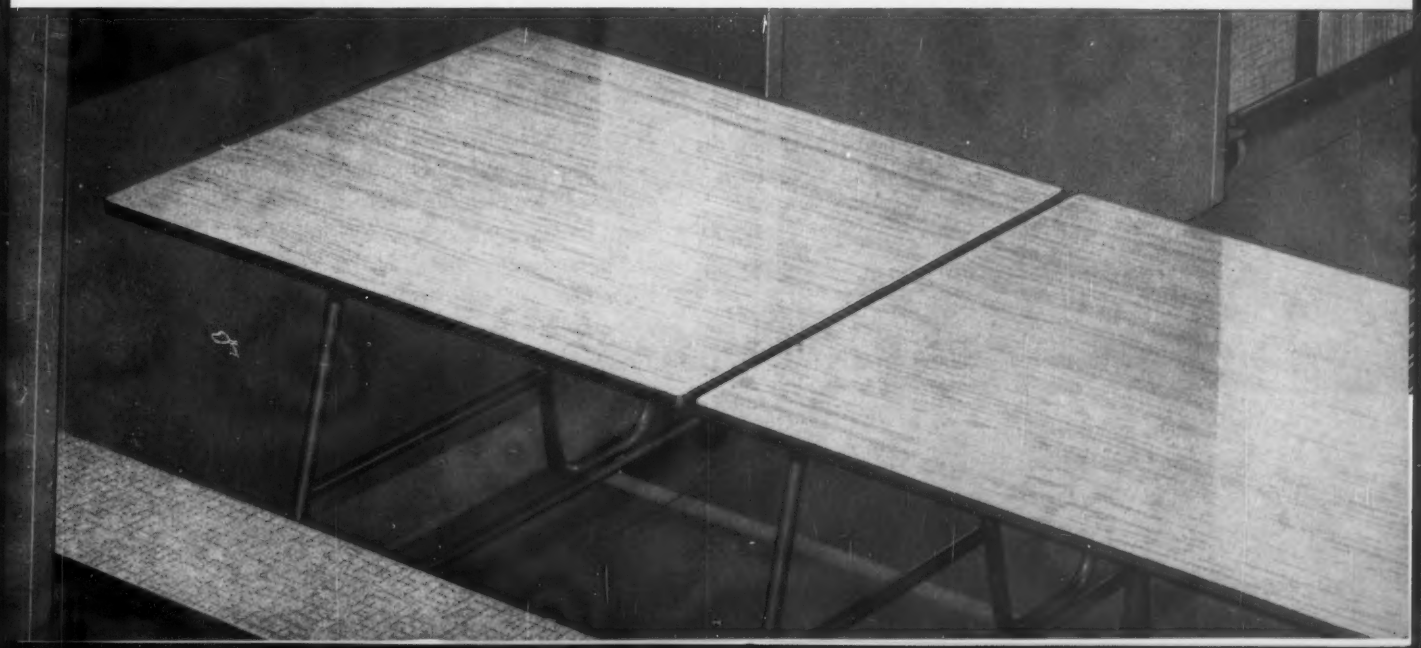
Pioneer PLASTICS CORP.

Sanford, Maine • Los Angeles, Calif.



BETHLEHEM SLABFORM

cuts concrete forming costs by one-third

At the Cole Steel Equipment Co. warehouse in York, Pa., 87 tons of Slabform were used directly over the Bethlehem structural shapes. Architect: Buchart Associates; general contractor: I. Reindollar & Son, Inc., York.

At Cole Steel Equipment's new warehouse in York, Pa., some 87 tons of Bethlehem Slabform were welded directly to steel beams to support a 4½-in., poured-in-place slab.

By using Slabform in place of the usual forming material over steel beams, it is estimated that forming costs were cut by one-third. Here's why:

1. Slabform covered the floor area quicker, at less labor cost.

2. Slabform is a permanent form, saving the entire cost of stripping.

The fasteners used with Slabform project into the slab and effectively tie the slab to the steel beams—helping to insure composite action.

Reinforcing bar high chairs, specially designed for use with Slabform, are provided at no additional cost over standard accessories.

Slabform Ideal as a Concrete Form

Bethlehem Slabform is a high-strength, formed steel sheet which is used both as a permanent steel form for poured concrete, and in roofs as the permanent supporting member for lightweight insulating concrete fills. In the latter case Slabform is always used galvanized. When used as a form only, Slabform is generally furnished black (uncoated) for reasons of economy.

Longitudinal Ribs for Strength

Bethlehem Slabform is manufactured from steel having a yield point over 90,000 psi. Longitudinal ribs give it exceptional strength.

Three Weights and Patterns

Slabform is available in three weights and patterns—Standard, Heavy-Duty and Extra Heavy-Duty—to satisfy the requirements of various spans and loads.

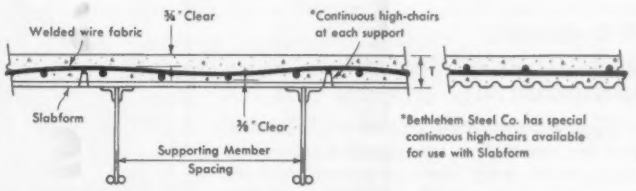
All three weights are available in black (uncoated) and galvanized finish.

Design load capacities, suggested specifications, and other information appear in Sweet's Architectural File. The nearest Bethlehem sales office would be glad to send you our Slabform folder, or talk with you about your job. No obligation, of course.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

Export Distributor: Bethlehem Steel Export Corporation

The table shows the load capacities for structural reinforced concrete slabs over Slabform. It shows various depth slabs reinforced with minimum welded wire fabric as required by code. This table also shows the type of Slabform recommended as a form.



LOAD CAPACITIES OF STRUCTURAL REINFORCED CONCRETE SLABS

(INCLUDING REQUIRED TYPE OF SLABFORM)

Slab Thickness (Inches)	Slab Weight (Lb/Ft²)	Slab Reinf. (Welded Wire Fabric)	LOADS IN LB PER SQ FT FOR SPANS SHOWN											
			1'-6	2'-0	2'-6	3'-0	3'-6	4'-0	4'-6	5'-0	5'-6	6'-0	6'-6	7'-0
2½	27	6 x 6—10/10	366	194	114									
2½	27	6 x 6—6/6				169	117	83						
3	32	6 x 6—10/10		279	167									
3	32	6 x 6—5/5				287	181	131						
3½	36	6 x 6—4/4					300	221	167	128	85	66	51	39
4	42	6 x 6—4/4						277	209	146	113	88	68	53
4½	48	4 x 4—6/6							279	199	156	123	98	78
5	52	4 x 4—4/4								348	278	225	185	
TYPE OF SLABFORM			STANDARD				HEAVY-DUTY			EXTRA HEAVY-DUTY				

NOTES:

1. Above table gives superimposed loads which various depth slabs will carry when reinforced as shown. The type of black (uncoated) Slabform to be used is also shown. When galvanized material is used add the slab weight to capacities shown to determine allowable superimposed loads. This is based on the galvanized material carrying the dead weight of the concrete. Loads shown are for interior spans only.
2. The recommended Slabform shown in each instance will not deflect more than 1/240 span under weight of concrete only.
3. Superimposed loads were determined as follows:

a. Bending moment $\frac{WL^2}{12}$; fc = 2500 psi, fs (welded fabric) = 28,000 psi (50% min. yield point per ACI 306(b)).

b. Reinforcing for 2½ in. and 3 in. slabs on spans up to 30 in. based on minimum allowable for temperature reinforcing per Steel Joist Institute "Code of Standard Practice" Section 3.7.

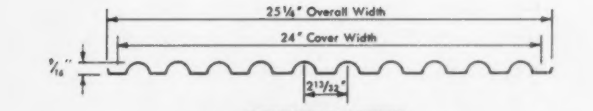
c. Reinforcing for 3½ in. and deeper slabs based on minimum allowable reinforcing per ACI building code 702(e) 2.

d. Effective slab depths determined as follows:

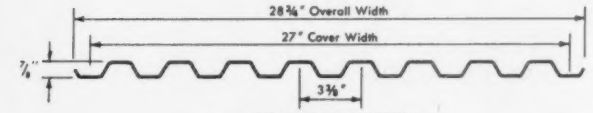
Standard Slabform d = T—1.28
Heavy-Duty Slabform d = T—1.44
Extra Heavy-Duty Slabform d = T—1.65

e. For end spans reduce capacities shown in table by 16%.

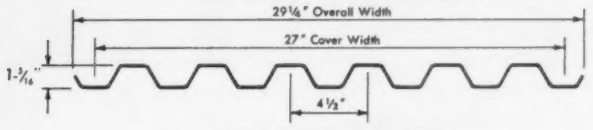
f. For simple spans reduce capacities shown in table by 33%.



STANDARD SLABFORM
Standard Lengths: 6'-3", 8'-3", 10'-3" and 12'-3".



HEAVY-DUTY SLABFORM
Standard Lengths: 6'-0" to 18'-6" in 6" Increments.



EXTRA HEAVY-DUTY SLABFORM
Standard Lengths: 6'-0" to 21'-6" in 6" Increments.

NOTE: ALL DIMENSIONS NOMINAL

After installation, the appearance from below is neat and clean

BETHLEHEM STEEL

NEW EXTRUDED ALUMINUM

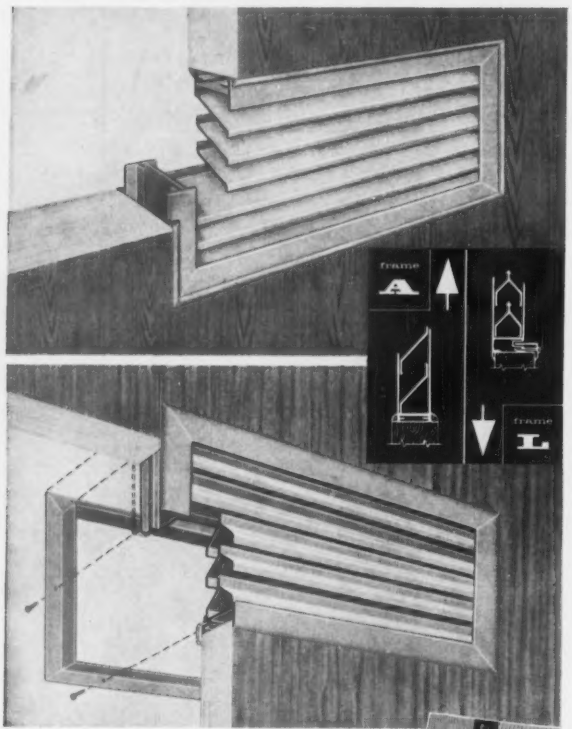
C/S DOOR LOUVERS

superb quality
rugged construction
competitively priced

This new C/S Louver is a precision engineered product that is neat, attractive, and practical. It is competitive with sheet metal assemblies yet has many attractive qualities available only in extrusions. C/S mass production facilities make possible off-the-shelf shipment and stock item pricing.

Two blade styles and two frame sizes simplify door louver selection. The A Frame louver uses traditional wood molding. The L Frame louver is supplied with a matching extruded interior trim frame that quickly and securely clamps the louver in the door opening.

Five louver types are available: sight-proof, light proof, vertical line, sound absorbent, and standard. They are available in mill finish aluminum, etch and clear lacquer, anodized or prime coat for field painting.



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— Complete specifications, stock sizes, technical information, and typical installation illustration.

C/S **CONSTRUCTION SPECIALTIES, INC.** DEPT. PA-260
55 Winans Avenue, Cranford, New Jersey

Please send C/S Door Louver

☐ literature ☐ specifications
☐ name of local representative so that we may inspect product sample

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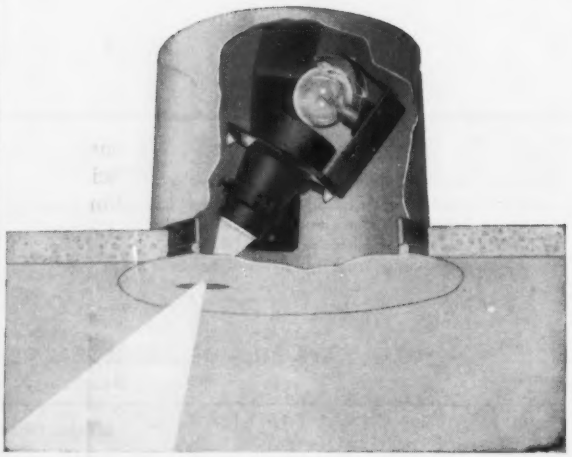

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windows without lintels doors without jambs...

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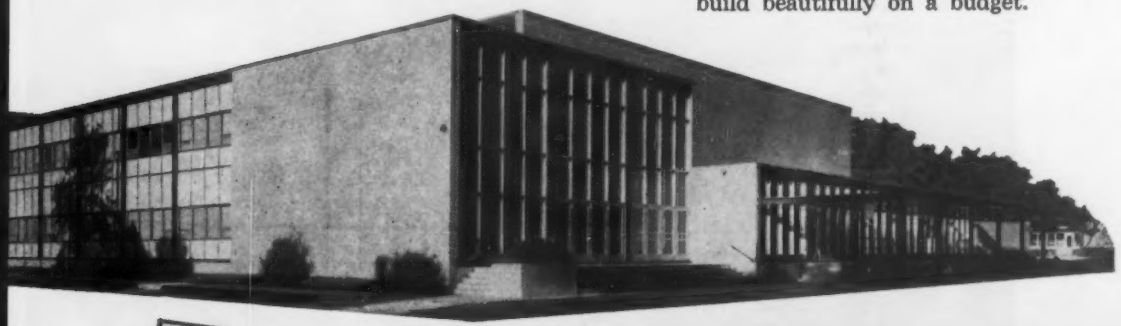
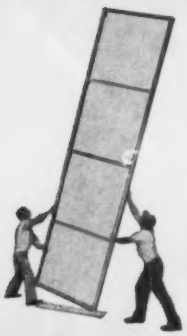
MARMET Curtain Wall is engineered in many ways to hold down your building cost per square foot . . . without sacrificing character of design or quality of materials. The cost of installing and "plumbing" many individual frames for windows and doors common to other types of fenestration is saved. Assembly of wall sections is also simplified for savings in erection costs. With Marmet Curtain Wall, Watertown was able to build beautifully on a budget.

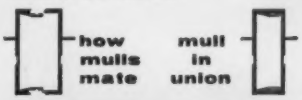


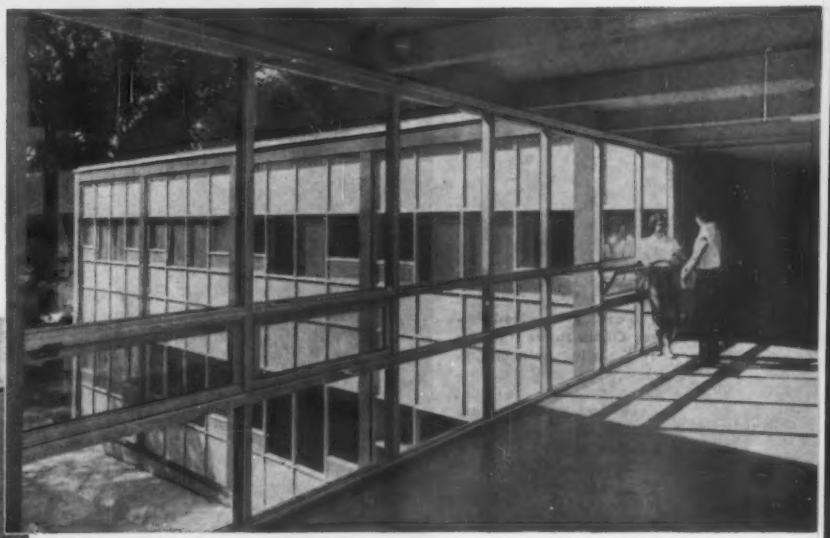
Watertown High School
Watertown, Wis.
Architect:
Durrant & Berquist
Madison, Wisconsin

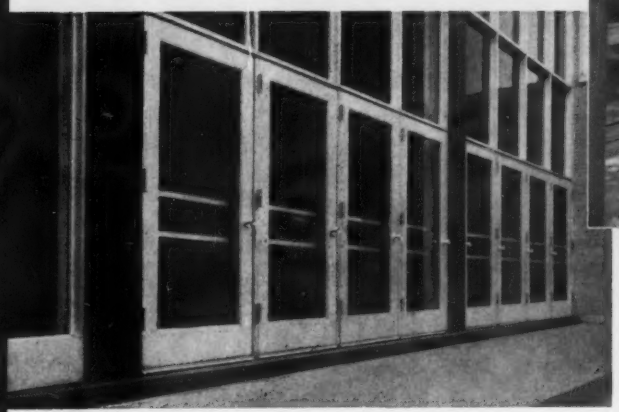


Series 6442-43 for 1 story or multi-story gridwall structures

Large interlocking grids with mating vertical mulls 4½" or 6" deep for varying shadow lines can quickly be erected by two men. Mortise and tenon type joints are connected with bolts, carefully concealed by the glass race. Special expansion joints are employed at the proper intervals.







Notice how the doors in the entrance at left are hung right in the curtain wall section without requiring special, separate framing.

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The corridor of a Fred Harvey Oasis Restaurant on Tri-State tollway near Chicago, illustrating the dramatic, decorative treatment possible with Steeldome construction. The exposed concrete waffle ribs of the ceiling are painted charcoal gray, sounding a new note in decor motif.

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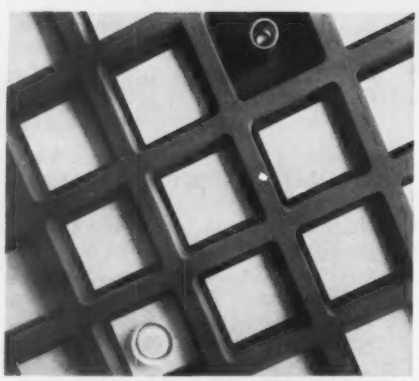
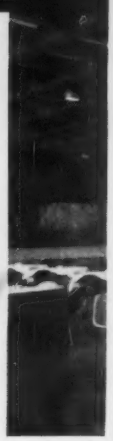


Straight-up view of two-way concrete joist construction formed with Steeldomes. The exposed concrete has been painted and the voids treated with acoustical tile. Voids also provide a new convenience for the placement of lighting fixtures, ventilators and intercom equipment.



Wide open space, free of columns, is economically attained in the general restaurant area with Steeldome construction. Here again the fresh, new decorative scheme is made possible by attractively painting the exposed concrete waffle design ceiling, adding charm to the room.

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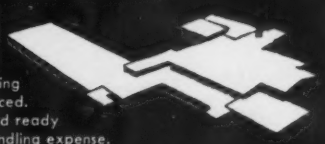

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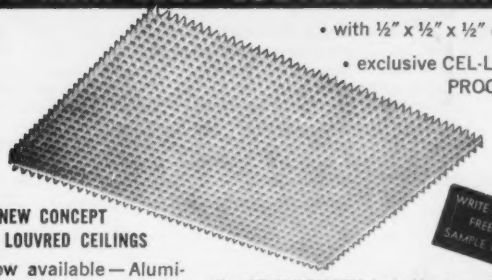

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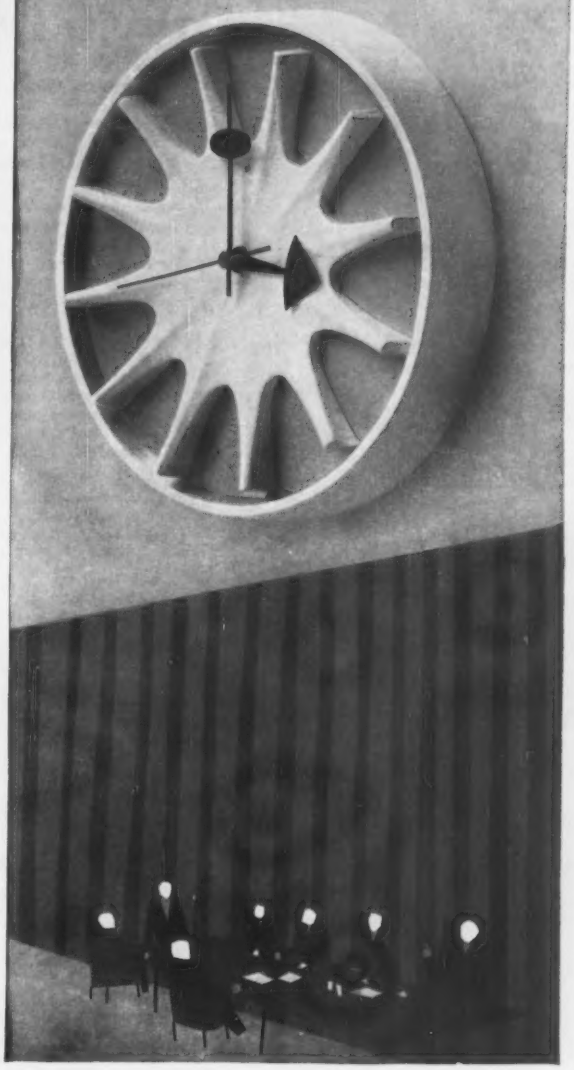

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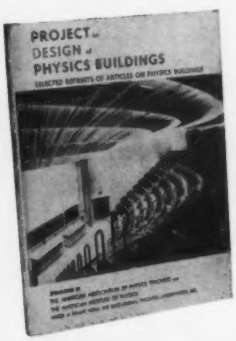

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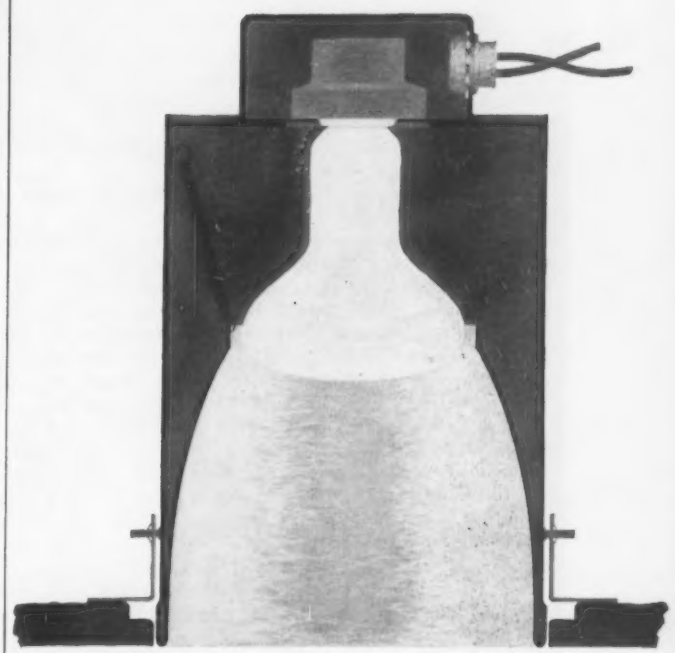

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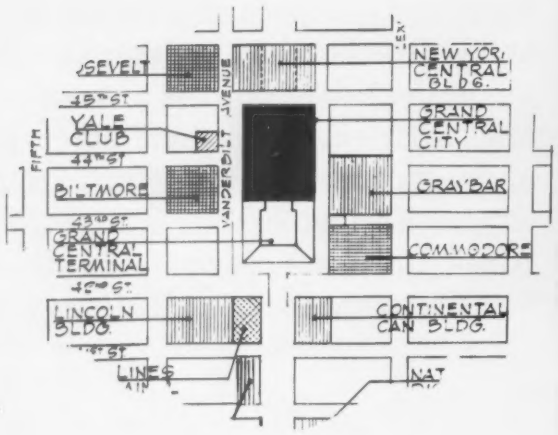
948 958	SURFACE FLANGELESS	150w PAR-38 FLOOD LAMP

P.S. who would say NO?



The other evening there was a "seminar" at the New School for Social Research in New York, devoted to an examination of urban-design matters, and particularly concerned with a critical appraisal of Grand Central City, the world's largest commercial skyscraper; to be built in back of Grand Central Station in our town, designed by Emery Roth & Sons, with Pietro Belluschi and Walter Gropius as design consultants. This has been a controversial building (see P/A NEWS REPORT, MARCH 1959; P/A VIEWS, MAY 1959 and AUGUST 1959), and I had expected some fur to fly (so had the design panel, I think); but, as usual in this sort of public criticism, we were all very kind.

The obvious points were made about the additional congestion that such a new cityful of office workers will cause in a metropolitan area already difficult to travel about, on foot, by subway, or by car. The builder-entrepreneur, Erwin Wolfson, defended his project as commercially feasible and at the same time respectful of the present railroad station, and spoke proudly of his architects; Gropius looked very unhappy as he showed slides of the compromise design; Belluschi spoke quite cynically, I felt, about the probable death of the city and the inevitability of such buildings as this, and the reasonableness of urban congestion as contrasted with non-urban greenery and open spaces; Dick Roth explained the change from a north-south to an east-west orientation of the tower. On the "critical" side, Victor Gruen made good points about the unwisdom of bringing automobiles into the city, and pointed to lack of city-plan controls as the real culprit in this sort of congestion; Peter Blake demonstrated that tax laws aid the bad builder and handicap the progressive one; Paul Zucker, to the surprise of everyone, made a glowing defense of the building, as architecture and as a planning phenomenon.

That left me, and since it didn't seem to be a climate in which to express likes or dislikes of the building as architecture, and since the questions of how many cars will be parked in the building's garage, how high the base is, how many exits there are, whether the lozenge shape is sensible or not, and so on, seemed to me quite unimportant, I made what was described as a naïve suggestion. I asked why this great, potentially beautiful hole in the middle of Manhattan had to be plugged with the world's largest cork. Granted that it is probably the world's most expensive land; we are also the world's greatest know-how possessors; surely, if we wanted to, we could find some way to *not* build a building there, and to develop it as the world's most important, pleasant plaza, for use by the world's already greatest agglomeration of office workers.

The suggestion met with no seconders, but it did stir enough discussion of the need, or non-need, of open spaces in city hearts to make me feel even more strongly that there was a defensive, we-had-to-do-the-best-we-could-because-obviously-*something*-was-going-to-be-done attitude on the part of the architects. It has been said about the project that if Belluschi and Gropius had not helped Roth improve his design, others would have; that if Roth had not taken the original commission, another firm would have welcomed it.

•

Thinking about all this, after the meeting, it occurred to me that some brave bold gestures on the part of brave, bold architects might help arrest this trend toward the filling of all spaces in urban growth. Is it the architect's responsibility merely to do the best he can; to make the best of an admittedly bad situation; to add to the number of sides of a building like this; to decrease its bulk slightly; to refine the details, improve the silhouette?

Or in some instances (particularly a dramatic instance) should an architect say: "I will have no part in this; there should be no building here." We all realize, of course, that this would be a futile gesture—but I wish that I knew of a few such futile, dramatic denouncements. Unfortunately, we have instead the classic instance of Le Corbusier explaining well, one week, why the United Nations should not be located in an urban center and the next week leaping to design a Manhattan UN skyscraper; or Wright proclaiming that a tall building must throw its full shadow on its own land, and soon after publicizing his mile-high extravaganza for Chicago. And now we have two of the most articulate exponents of the need for human scale in our cities defending the vista-blocking urban wall shown in the publicity photograph above.

I can only assume that they feel their contribution is important, and good, in this case. In some other instances, wouldn't it be an exhilarating thing to have a great architect get equal or more publicity in a great, dramatic announcement that he would not lend his name to a project wrongly conceived from a human point of view?

Or is that too much to hope for?

Thomas H. Creighton

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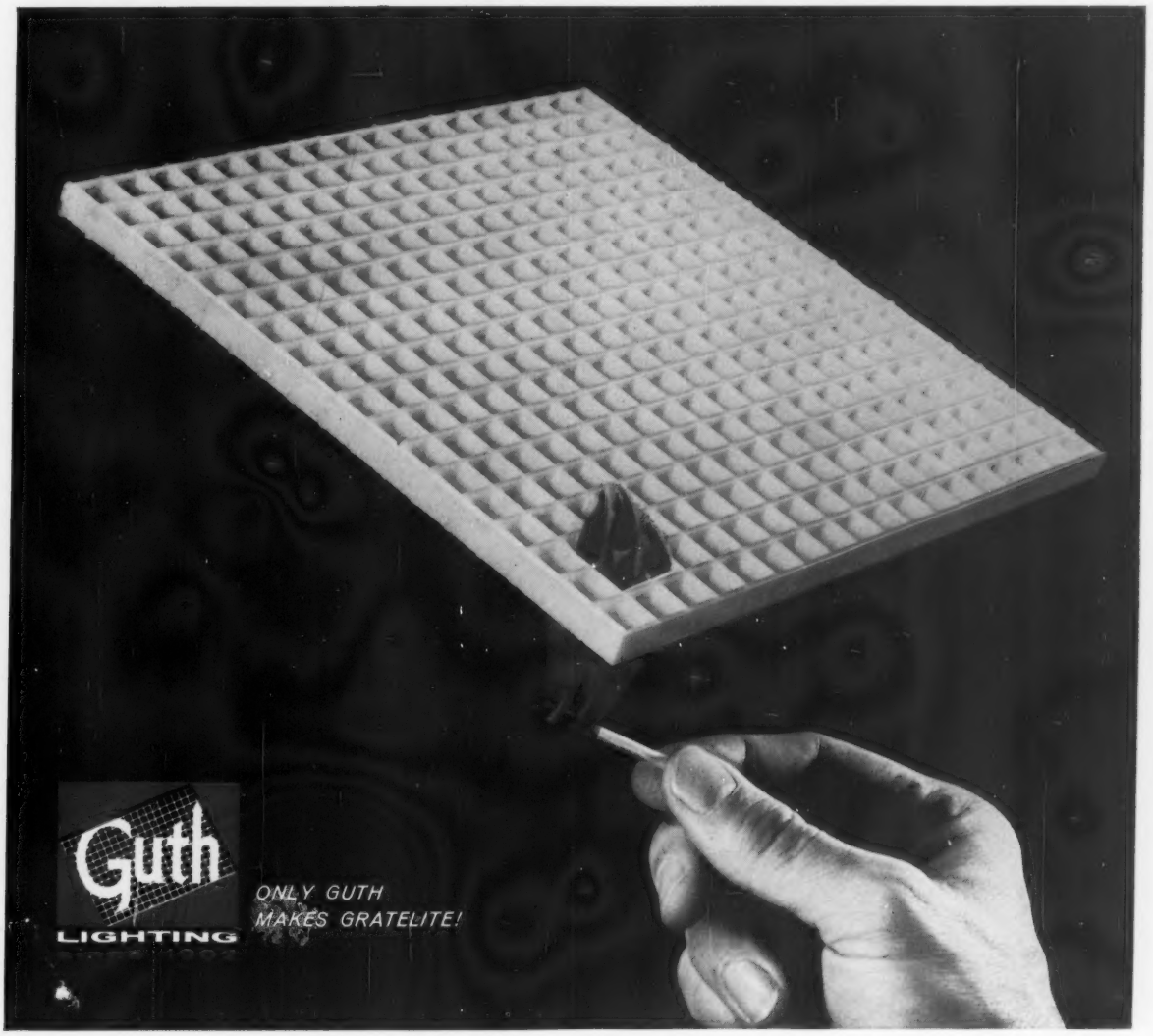

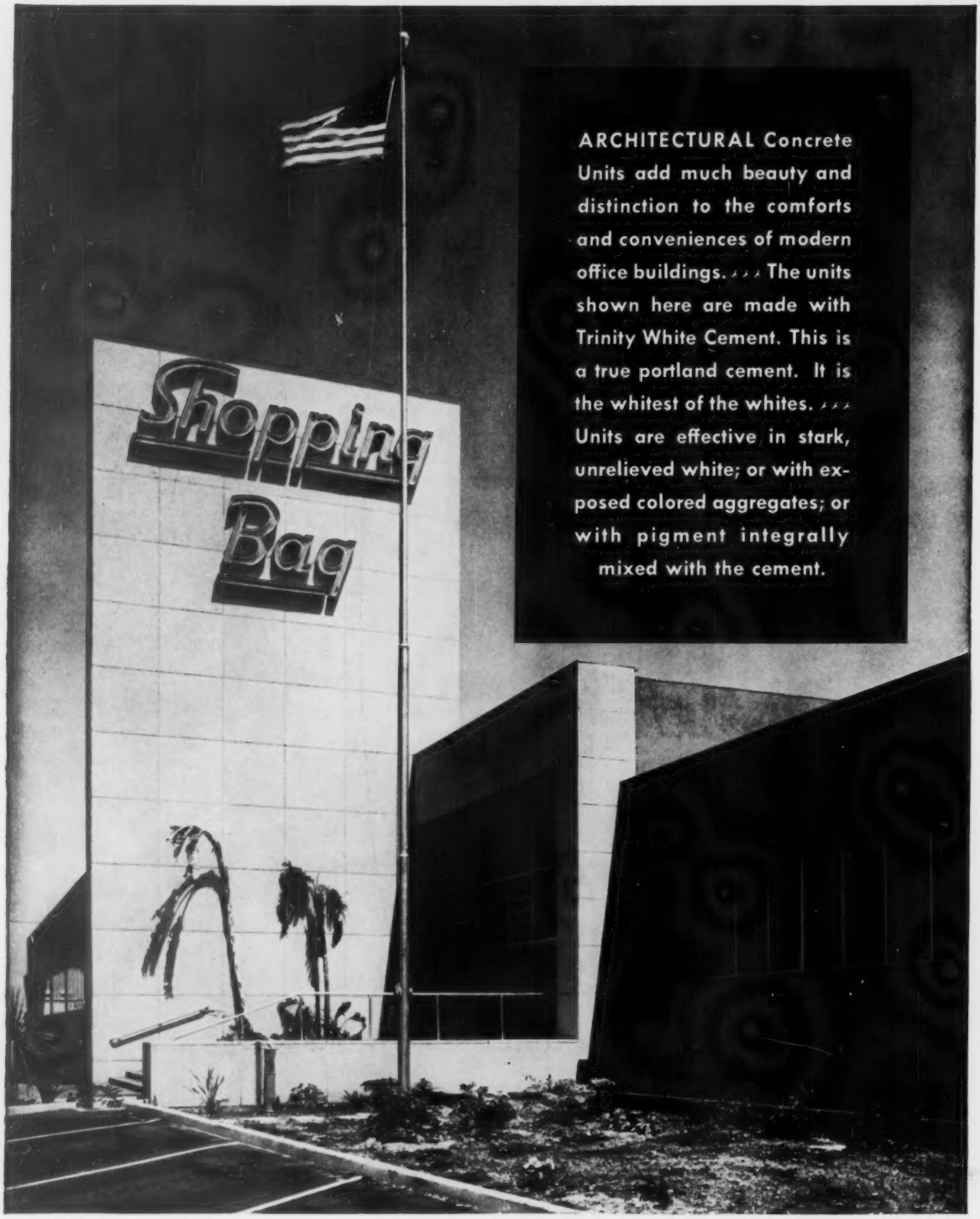

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